

2022 国际制导、导航与控制学术会议

2022 International Conference on Guidance, Navigation and Control

2022 年 8 月 5-7 日 中国·哈尔滨

August 5-7, 2022 Harbin, China

ICGNC22 程 序 册

Final Program



<http://icgnc.buaa.edu.cn>



ICGNC 2022

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Final Program

主办单位

中国航空学会制导、导航与控制分会
飞行器控制一体化技术重点实验室

技术协办单位

中国自动化学会导航制导与控制专业委员会
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中国自动化学会控制理论专业委员会
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Harbin Engineering University

关于 ICGNC2022 疫情防控的紧急公告

各位嘉宾和代表：

为确保 ICGNC 2022 会议顺利召开和全体参会人员健康安全，请各位参会代表务必加强防护，严格按照酒店和会务组有关要求参会和用餐。现就疫情防控工作有关事宜公告如下：

1. 参会代表请凭 2022 年 8 月 3 日(含)之后的核酸检测为阴性的有效证明报到参会。
2. ICGNC 2022 会议现场报到注册时必须**出示龙江健康码**，绿色方可以注册。在大会报告、论坛报告、分会场报告等会议期间，必须凭本届会议的**代表证**实名入场，并接受**体温检测**，杜绝转让和借用他人会议证。
3. 自助餐和宴会，必须同时凭**会议证和餐券入场，接受体温检测**。
4. 会议期间，为了您和他人的安全，请认真**佩戴口罩并接受体温监测**。
5. 为了便于参会作者出行和做核酸，本届会议组委会在报到处为参会代表安排了免费核酸检测。
6. 疫情防控其它未尽事宜，请实时关注并严格遵守国家、黑龙江省、哈尔滨市等属地政策。疫情紧急联系人：田雪怡 (13766998000)

ICGNC2022 组织委员会

2022 年 8 月 4 日



Urgent Notice on Prevention and Control COVID-19 during ICGNC2022

In order to ensure the safety of all ICGNC2022 participants, the relevant issues on COVID-19 prevention and control are announced as follows:

1. The representatives should report to the conference with a negative nucleic acid test after August 3, 2022.
 2. The representatives must wear the ICGNC2022 representative card all the time during the conference, the health code and temperature test are also needed, and the lending or borrowing representative card behaviors are prohibited strictly.
 3. During lunch, dinner and banquet, the representatives must be accompanied by temperature test.
 4. The representatives must wear masks carefully during ICGNC2022.
 5. For the convenience of participants, the conference has arranged free nucleic acid testing at the registration booth.
 6. Please pay close attention to and strictly abide by the epidemic prevention and control policies.
- People incharge of COVID-19 prevention and control: Xueyi Tian (+86-137-6699-8000).

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欢迎辞

Welcome Address

We are pleased to welcome you to the 2022 International Conference on Guidance, Navigation and Control (ICGNC 2022), which takes place at Harbin Victories Hotel, China. ICGNC 2022 is scheduled on August 5-7, 2022. Despite the tremendous influence of COVID-19, our ICGNC2022 still received worldwide attentions from GNC researchers, professors and students, which shows GNC is a rising and hot field.

International Conference on Guidance, Navigation and Control (ICGNC) is a biennial event, which is also one of the leading events in Guidance, Navigation and Control (GNC). ICGNC 2022 is sponsored by Technical Committee on Guidance, Navigation and Control (TCGNC), Chinese Society of Aeronautics and Astronautics (CSAA), and Science and Technology on Aircraft Control Laboratory. It is technically co-sponsored by Technical Committee on Navigation, Guidance and Control (TCNGC), CAA, Technical Committee on Unmanned Aerial Systems Autonomous Control (TCUASAC), CAA, and Technical Committee on Control Theory (TCCT), CAA, and Technical Committee on Robotics Intelligence (TCRI), CAA. ICGNC 2022 is organized by Harbin Engineering University. The conference consists of plenary talks, chief designer forum, national-level model teacher forum, young scientist forum, invited sessions, oral sessions and poster sessions for academic exchanges.

The ICGNC 2022 marks the tenth edition of the GNC series. We are proud to announce that this congress has received 1137 papers submissions from 6 countries and areas. This is the highest number since launching ICGNC. After a rigorous peer-review process, 710 English papers, 295 Chinese Papers and 3 Abstract Papers have been accepted for either oral or poster presentation at the conference in 69 oral technical sessions and 4 poster sessions, which including 1 best paper award oral defense session.

The conference program is highlighted by five plenary speeches given by Professor Zili Wang from Beihang University, Professor Guangren Duan from Harbin Institute of Technology, Professor You He from Naval Aeronautical University, Professor Jonathon Chambers from Loughborough University (UK), and Professor Hongjie Lei from Xi'an Flight Automatic Control Research Institute, AVIC.

This year, we invited five panelists for Forum Panelist, who are Professor Ning Dai from Xi'an Flight Automatic Control Research Institute, AVIC, Professor Bo Su from China North Vehicle Research Institute, Professor Ning Yao from Beijing Institute of Control Engineering, Professor Cong Ye from China Ship Scientific Research Center, and Professor Zhibing Zhang from Shenyang Aircraft Design and Research Institute, AVIC. The conference program also features a GNC National-level Model Teacher Forum on innovation and practice of GNC education with three famous national-level model teachers: Professor Li Shi from Tsinghua University, Professor Wanliang Wang from Zhejiang University of Technology, and Professor Xiaobei Wu from Nanjing University of Science and Technology. We also invited 10 young famous scholars in GNC field for Young Scientist Forum, who are Professor Long Cheng from Institute of Automation, Chinese Academy of Sciences, Professor Hairong Dong from Beijing Jiaotong University, Professor Junwei Han

from Northwestern Polytechnical University, Professor Xiaolin Ning from Beihang University, Professor Juntong Qi from Shanghai University, Professor Mengyi Wang from Beijing Institute of Electronic System Engineering, Professor Ligang Wu from Harbin Institute of Technology, Professor Hao Yang from Nanjing University of Aeronautics and Astronautics, Professor Junzhi Yu from Peking University, and Professor Yonggang Zhang from Harbin Engineering University.

ICGNC2022 also confers the LI Ming Best Paper Award, FENG Ru Best Paper Award and Best Poster Paper Award, to promote the academics, encourage young scientists to participate in academic activities, further to improve the paper quality and expand conference influence.

Our English proceedings have been sent and will be published by Springer-Nature in Lecture Notes in Electrical Engineering promptly, and the accepted Chinese papers will be published in several esteemed journals. We show our special thanks to the staffs of Springer-Nature and other Chinese journal publishers. We also wish to express our sincere appreciation to all the individuals who have contributed to ICGNC 2022 in various ways. Special thanks are extended to our colleagues in the program committee for their thorough review of all the submissions, which is vital to the success of this conference, and also to the members in the organizing committee and the volunteers who have dedicated their time and efforts in planning, promoting, organizing and helping the conference. Last but not least, our special thanks go to invited plenary speakers as well as all the authors for contributing their latest research to the conference, and to the participants and the exhibitors in making ICGNC 2022 a memorable event.

This year is still a special year for everyone in the world and in China. We should cherish our gathering in the famous Ice City - Harbin for this exciting event in this hot summer. We hope that your stay in Harbin will be enriching and memorable and that the technical program will send you back home motivated, enthusiastic, cool, and full of innovative ideas.

We hope you enjoy the conference in Harbin.



Xinguo Zhang

General Chair

国际制导、导航与控制学术会议

历 届 会 议

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| 第一届 | 2007 中国制导、导航与控制学术会议
2007 年 11 月 4-5 日, 中国 北京 |
| 第二届 | 2008 中国制导、导航与控制学术会议
2008 年 11 月 14-16 日, 中国 西安 |
| 第三届 | 2009 中国制导、导航与控制学术会议
2009 年 11 月 14-15 日, 中国 北京 |
| 第四届 | 2010 中国制导、导航与控制学术会议
2010 年 10 月 16-18 日, 中国 上海 |
| 第五届 | 2012 中国制导、导航与控制学术会议
2012 年 8 月 10-12 日, 中国 北京 |
| 第六届 | 2014 IEEE 中国制导、导航与控制学术会议
2014 年 8 月 8-10 日, 中国 烟台 |
| 第七届 | 2016 IEEE 中国制导、导航与控制学术会议
2016 年 8 月 12-14 日, 中国 南京 |
| 第八届 | 2018 IEEE/CSAA 制导、导航与控制学术会议
2018 年 8 月 10-12 日, 中国 厦门 |
| 第九届 | 2020 国际制导、导航与控制学术会议
2020 年 10 月 23-25 日, 中国 天津 |
| 第十届 | 2022 国际制导、导航与控制学术会议
2022 年 8 月 5-7 日, 中国 哈尔滨 |
| 第十一届 | 2024 国际制导、导航与控制学术会议
2024 年 8 月, 中国 长沙 |

INTERNATIONAL CONFERENCE ON GUIDANCE, NAVIGATION AND CONTROL (ICGNC) PAST, PRESENT AND NEXT

First	CGNCC 2007 2007 Chinese Guidance, Navigation and Control Conference November 4-5, 2007, Beijing, China
Second	CGNCC 2008 2008 Chinese Guidance, Navigation and Control Conference November 14-16, 2008, Xi'an, China
Third	CGNCC 2009 2009 Chinese Guidance, Navigation and Control Conference November 14-15, 2009, Beijing, China
Fourth	CGNCC 2010 2010 Chinese Guidance, Navigation and Control Conference October 16-18, 2010, Shanghai, China
Fifth	CGNCC 2012 2012 Chinese Guidance, Navigation and Control Conference August 10-12, 2012, Beijing, China
Sixth	IEEE CGNCC 2014 2014 IEEE Chinese Guidance, Navigation and Control Conference August 8-10, 2014, Yantai, China
Seventh	IEEE CGNCC 2016 2016 IEEE Chinese Guidance, Navigation and Control Conference August 12-14, 2016, Nanjing, China
Eighth	IEEE/CSAA GNCC 2018 2018 IEEE/CSAA Guidance, Navigation and Control Conference August 10-12, 2018, Xiamen, China
Ninth	ICGNC 2020 2020 International Conference on Guidance, Navigation and Control October 23-25, 2020, Tianjin, China
Tenth	ICGNC 2022

2022 International Conference on Guidance, Navigation and Control
August 5-7, 2022, Harbin, China

Eleventh ICGNC 2024

2024 International Conference on Guidance, Navigation and Control
August, 2024, Changsha, China

ICGNC Official Website: <http://icgnc.buaa.edu.cn>

会议机构

主办单位



中国航空学会(CSAA)制导、导航与控制分会
(TCGNC)



飞行器控制一体化技术重点实验室

技术协办单位



中国自动化学会(CAA)导航制导与控制专业委员
会(TCGNC)



中国自动化学会(CAA)无人飞行器自主控制专业
委员会(TCUASAC)



中国自动化学会(CAA)控制理论专业委员会
(TCCT)



中国自动化学会(CAA)机器人智能专业委员会
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Technical Committee on Control Theory (TCCT), Chinese Association of Automation (CAA)



Technical Committee on Robotics Intelligence (TCRI), Chinese Association of Automation (CAA)

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Dayi Wang
Daobo Wang
Donghui Wang
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Ling Wang
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Shaoping Wang
Wenjuan Wang
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Yingxun Wang
Yong Wang
Yongji Wang
Zhuo Wang
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Ruixuan Wei
Xingxing Wei
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Hao Wu
Huaining Wu
Lirong Wu
Min Wu

Shufan Wu
Wenqi Wu
Zhengguang Wu
Yuanxin Wu
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Jin Xiao
Guangming Xie
Lirong Xie
Yongchun Xie
Hui Xiong
De Xu
Shengyuan Xu
Xin Xu
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Chao Xu
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Hao Yang
Liang Yang
Ming Yang
Yu Yao
Peng Yi
Jianqiang Yi

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Xiang Yu
Ziquan Yu
Wenwu Yu
Junzhi Yu
Wanmai Yuan
Xiheng Zang
Zhigang Zeng
Zhengyong Zhan
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Fubiao Zhang
Jian Zhang
Ke Zhang
Kezhi Zhang
Shuguang Zhang
Tao Zhang
Tingting Zhang
Wei Zhang
Wenan Zhang
Xianglun Zhang
Weiguo Zhang
Biao Zhao
Jiang Zhao
Jingzhou Zhao
Qianchuan Zhao

Xudong Zhao
Yanjie Zhao
Yifei Zhao
Yuxin Zhao
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Zhenyu Zhao
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Shiqiang Zheng
Ziyang Zhen
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Yisheng Zhong
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Qingrui Zhou
Rui Zhou
Shaolei Zhou
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ICGNC 2022 Conference Introduction

大会介绍

The 2022 International Conference on Guidance, Navigation and Control (ICGNC 2022) will be held in Harbin on August 5-7, 2022, following the successes of previous nine events. International Conference on Guidance, Navigation and Control (ICGNC) is a biennial event, which is also one of the leading events in Guidance, Navigation and Control (GNC). ICGNC 2022 is sponsored by Technical Committee on Guidance, Navigation and Control (TCGNC), Chinese Society of Aeronautics and Astronautics (CSAA), and Science and Technology on Aircraft Control Laboratory. It is technically co-sponsored by Technical Committee on Navigation, Guidance and Control (TCNGC), Chinese Association of Automation (CAA), Technical Committee on Unmanned Aerial Systems Autonomous Control (TCUASAC), Chinese Association of Automation (CAA), and Technical Committee on Control Theory (TCCT), Chinese Association of Automation (CAA), Technical Committee on Robotics Intelligence (TCRI), Chinese Association of Automation (CAA). ICGNC 2022 is organized by Harbin Engineering University. The conference consists of plenary speeches, chief designer forum, model teacher forum, young scientist forum, invited sessions, oral sessions and poster sessions for academic exchanges.

继前九届国际导航与控制大会成功举办后，2022 国际导航与控制大会（ICGNC 2022）将于 2022 年 8 月 5-7 日在哈尔滨举行。导航与控制国际会议（ICGNC）是一项两年一次的活动，也是导航与控制领域的主要活动之一。ICGNC 2022 由中国航空学会（CSAA）制导、导航与控制分会（TCGNC）和飞行器控制一体化技术重点实验室共同主办，由中国自动化学会（CAA）导航制导与控制专业委员会（TCNGC）、无人飞行器自主控制专业委员会（TCUASAC）、控制理论专业委员会（TCCT）和机器人智能专业委员会（TCRI）共同协办，由哈尔滨工程大学承办。会议包括大会特邀报告、总师论坛、国家级教学名师论坛、青年科学家论坛、特邀专题、口头报告专题和张贴海报专题等，以进行学术交流。

I. Conference Venue Information 会场信息

ICGNC 2022 will take place at Harbin Victories Hotel located on No. 301, Hongqi Road, Development District, Harbin, 150090, P. R. China. The hotel is located in a beautiful area in modern sytely and full of charm, with convenient transportation to downtown Harbin and other domestic areas.

哈尔滨华旗饭店位于南岗经济开发区东北部红旗大街 301 号，坐落在哈尔滨最具现代化城市风范和魅力的经济新区，交通便利，可快捷去往哈尔滨市中心及国内各地。



图 1 Location of the host venue 大会主会场的位置

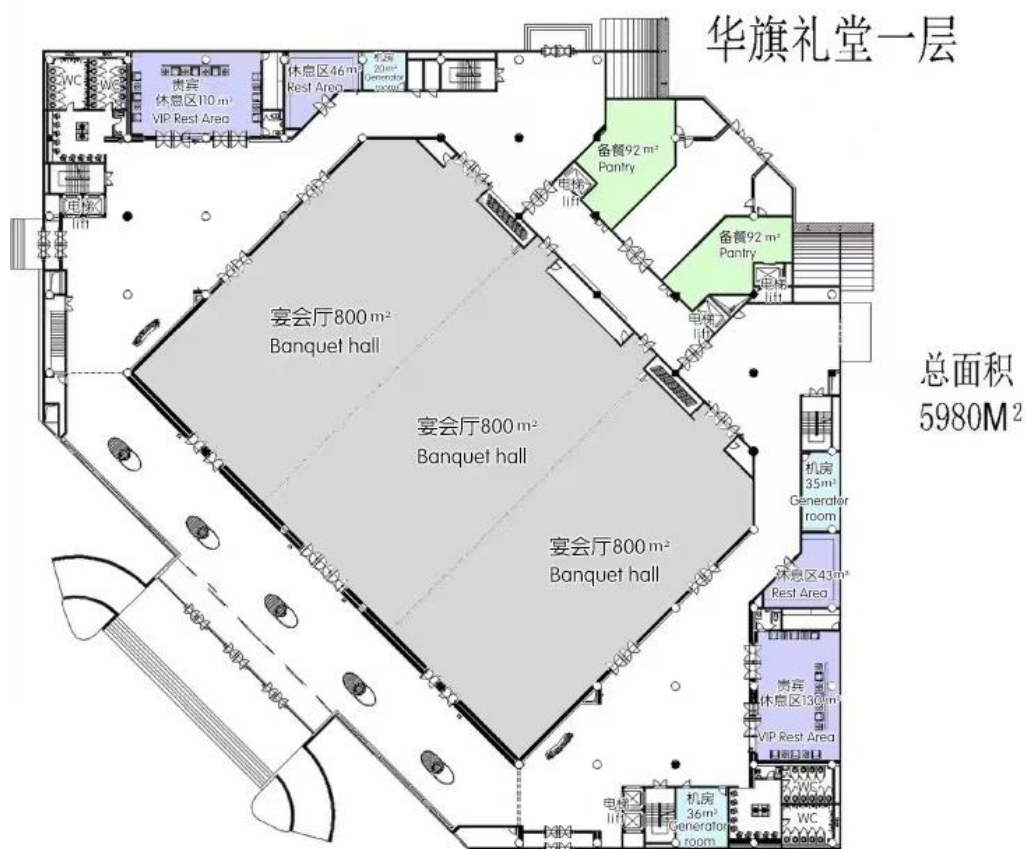


图 2 The 1st Floor Map of Victories Hall 华旗礼堂一层地图

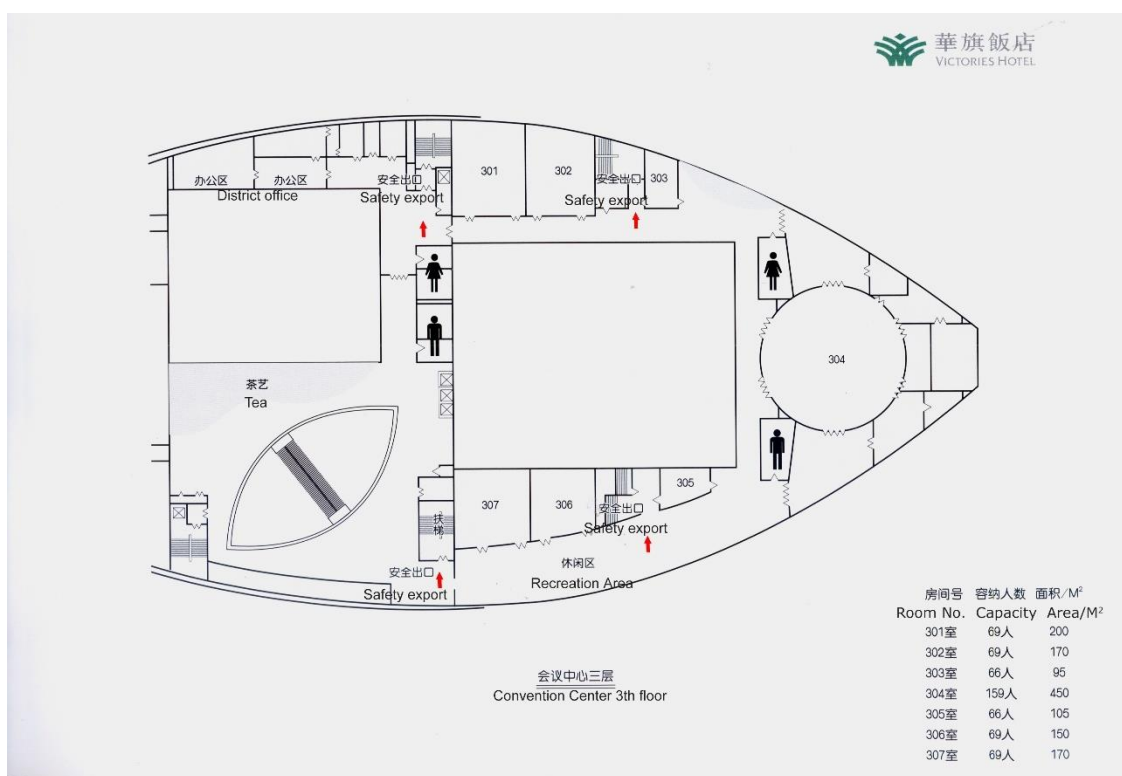


图 3 The 3rd Floor Map of International Convention Center 国际会议中心 3 层地图

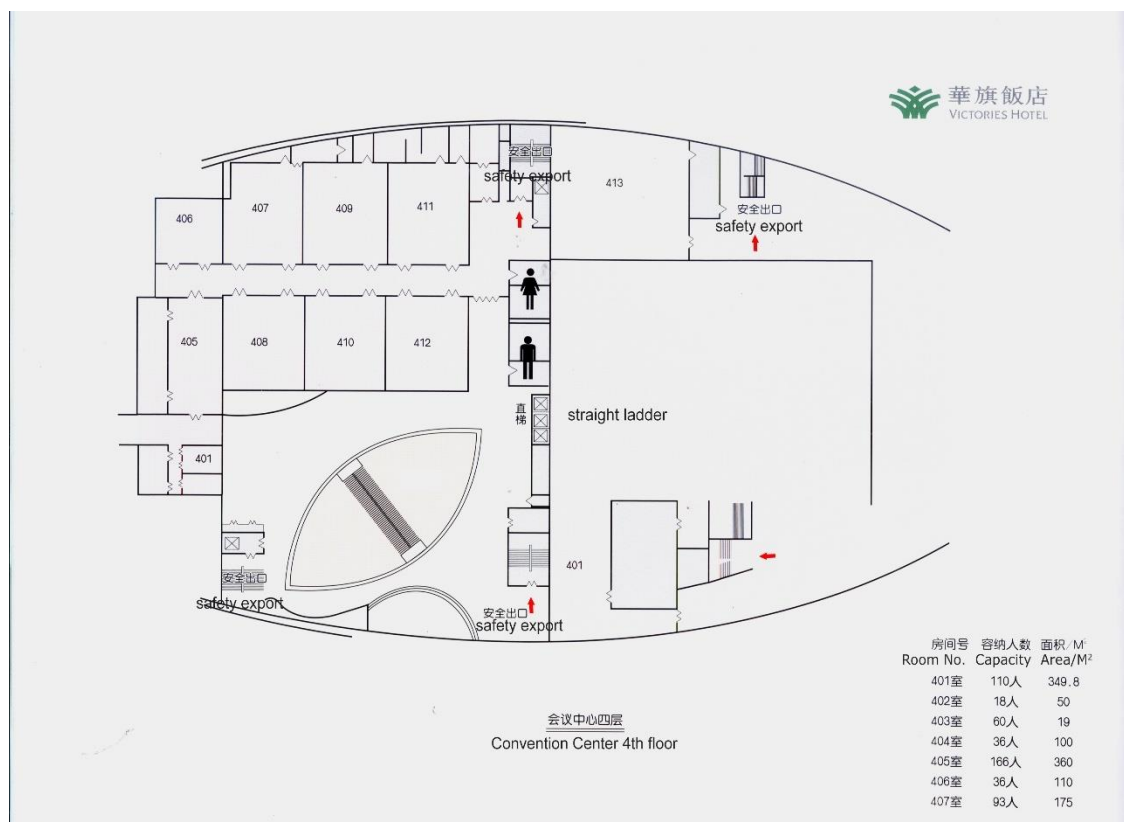


图 4 The 4th Floor Map of International Convention Center 国际会议中心 4 层地图

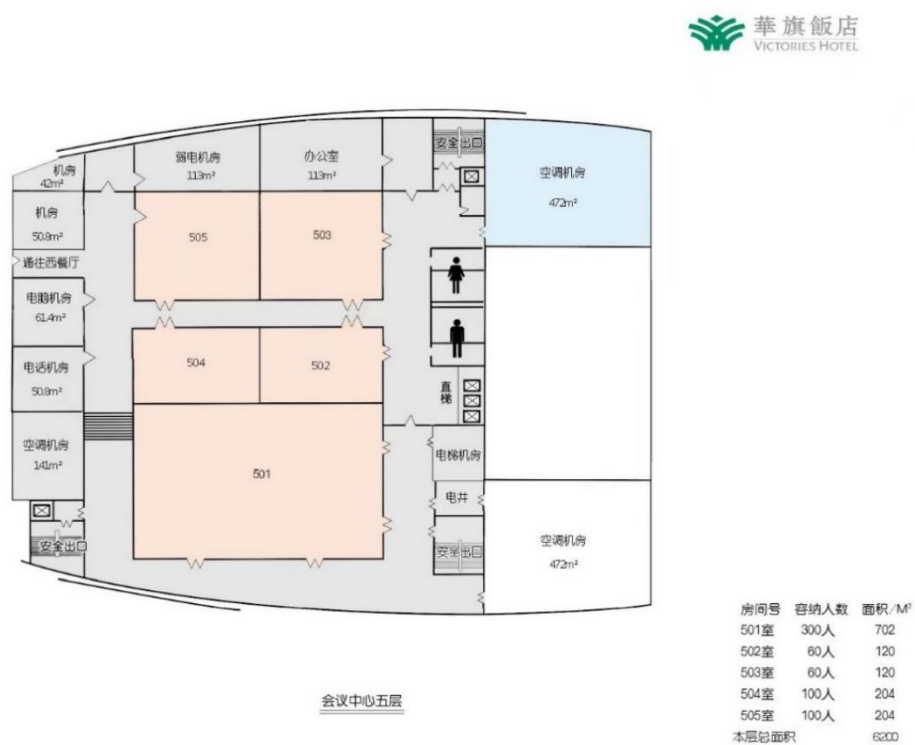


图 5 The 5th Floor Map of International Convention Center 国际会议中心 5 层地图

II. 交通信息

A、太平国际机场—华旗饭店

- 1) 出租车：行程约 45 公里，车程约 1 小时，费用约 130 元。【运营时间:24 小时昼夜】
- 2) 机场巴士 2 号线：太平国际机场至华旗饭店乘坐 13 站到会展中心站下车，步行 400m 即到华旗饭店。路程约 50 公里，车程约 80 分钟，票价 20 元/位。【运营时间:08:00-凌晨 01:30 分(每半点、整点发车)，咨询热线:【0451-88001886】

B、哈尔滨西站—华旗饭店

- 1) 出租车：路程约 16 公里，车程约 40 分钟，费用约 35 元。【运营时间:24 小时昼夜】

C、哈尔滨站—华旗饭店

- 1) 出租车：路程约 9 公里，车程约 25 分钟，费用约 20 元。【运营时间:24 小时昼夜】
- 2) 公交车：抵达哈尔滨站南广场乘坐 52 路至会展中心站下车，步行约 400m 即到，全程 8 公里，约 45 分钟，票价 1 元。【参考运营时间:06:00-19:00】

III. 住宿信息

会议举办方为参会人员在华旗饭店和悠融酒店分别预约了 420/380 和 350 元三类优惠价位的房间，参会者凭借大会函件可享受会议优惠价格。住宿预订请**直接拨打酒店订房电话**，声明您参加 ICGNC 大会和个人身份，**7 月 28 日 23 点前**预定可保证房间并享受上述会议优惠价。如有疑问可联系会务组田雪怡：13766998000。

表 2 大会推荐酒店信息一览表

序号	酒店名称	至主会场的 距离/时间	房型报价（元）	酒店网址	订房电话
1	华旗饭店	0m/0min	普通标间/大床；	http://room48732.leyo	18686798081
			豪华间		
			行政/高级标间/		
			大床；标准套房		
			380	http://room48732.leyo	王妍
			420	http://room48732.leyo	



图6 大会主会场与分流酒店位置地图

酒店预订

(1) 哈尔滨华旗饭店

华旗饭店位于哈尔滨南岗经济开发区东北部红旗大街 301 号，隶属于黑龙江建设投资集团，是由省、市政府共同投资按国际五星级酒店标准兴建的集会议、酒店为一体的，省内最具规模的大型会议饭店。

酒店前台预订电话：0451-8186 8888

(2) 哈尔滨悠融酒店

哈尔滨悠融酒店地处南岗开发区 CBD 商圈的核心位置，紧邻国际会展体育中心，交通极为便利，酒店内饰高雅明亮、设施齐备。

酒店前台预订电话：0451-8570 3888

IV. 其他信息

时区

UTC/GMT +8

天气

哈尔滨是一个四季分明的城市，适合旅游。有关天气更新，请访问

<https://www.tianqi.com/haerbin/>

Climate	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug	Sep.	Oct.	Nov	Dec.
Daily highs(°C)	-13	-7	2	13	21	26	28	26	21	12	0	-9
Daily lows(°C)	-24	-20	-10	1	8	15	18	16	9	1	-10	-20
Precipitation(mm)	4	5	11	21	37	83	154	111	62	26	9	6

货币兑换

人民币是流通中的法定货币。官方货币汇率见<http://www.boc.cn/sourcedb/whpj/enindex.html>（全国范围适用）。除机场（24 小时）和顶级酒店（通常为 4 星至 5 星）提供货币兑换服务外，周一至周五，中国银行和其他主要银行的所有分行都提供货币兑换服务。

旅游信息

哈尔滨位处中国东北，是黑龙江省的省会，是中国东北北部政治、经济、文化中心。特殊的历史进程和地理位置造就哈尔滨这座具有异国情调的美丽城市，它不仅荟萃了北方少数民族的历史文化，而且融合了中外文化，是中国著名的历史文化名城和旅游城市，素有“冰城”、“东方莫斯科”、“东方小巴黎”之美称。全市土地面积 5.31 万平方公里，拥有 45 个少数民族，汇集多种宗教文化，是全国唯一的佛教、道教、基督教、天主教、伊斯兰教、东正教并存的城市。

哈尔滨市居民以汉族为主，受外乡人和外国侨民饮食习俗的影响，形成多元的饮食文化结构，以东北地方菜、鲁菜、京菜为主，俄式西餐、列巴（一种大面包）、红肠、苏波汤也成了百姓餐桌的寻常食品。哈尔滨人还受少数民族饮食习俗影响，喜欢吃粘糕、粘豆包、玉米饼子、大碴子、小米饭等。

欲了解更多信息，请访问

<https://www.travelchinaguide.com/cityguides/heilongjiang/harbin/>

紧急情况

拨打 110 接通警察，拨打 119 接通消防/救护车服务。

电力供应

电源为 220 伏，50Hz。有关详细信息，请访问您当地的旅行商店。

饮用水

建议您饮用开水或购买瓶装水。城市周边有许多连锁便利店。

V. 联系信息

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组织委员会秘书处

陈子谦，哈尔滨工程大学

电话：+86-0451-82519410

手机：+86-13633661703

电子邮件：icgnc2022@163.com

VI. 会议安排总览

GNC 国家级教学名师论坛

2022 年 8 月 5 日（周五）： 09:00-11:30

GNC 青年科学家论坛

2022 年 8 月 5 日（周五）： 13:00-17:10

大会开幕式

2022 年 8 月 6 日（周六）： 08:30-08:50

大会报告

2022 年 8 月 6 日（周六）：

大会报告 I: 08:50-09:40

大会报告 II: 10:00-10:50 10:50-11:40

2022 年 8 月 7 日（周日）：

大会报告 III: 08:00-08:50 08:50-09:40

GNC 总师论坛

2022 年 8 月 7 日（周日）： 10:00-11:40

分会场论坛口头报告

2022 年 8 月 6 日（周六）：

第 1-17 组 A、B 13:30-15:30 15:50-17:50

优秀论文评选（第 19 组 A） 13:30-17:00

2022 年 8 月 7 日（周日）：

第 1-17 组 A、B 13:30-15:30 15:50-17:50

张贴海报

2022 年 8 月 6 日（周六）： 第 18 组 A、B 13:30-15:30 15:50-17:50

2022 年 8 月 7 日（周日）： 第 18 组 A、B 13:30-15:30 15:50-17:50

口头报告与张贴报告要求

Instruction for Oral and Poster Presentations

Oral Presentation:

- Oral Presentation Time: 10 minutes (except 15 minutes for Best Paper session).
- Each speaker is required to meet his/her session chairs in the corresponding session rooms 10 minutes before the session starts and copy the slide file (PPT or PDF) to the computer.
- Please note that each session room will be equipped with a LCD projector, screen and a laptop or desktop computer with general presentation software such as Microsoft PowerPoint and Adobe Reader preinstalled. Please make sure that your files are compatible and readable with our operation system by using commonly used fonts and symbols. If you plan to use your own computer, please test the connection and make sure it works before your presentation.

Poster Presentation:

- The size of poster paper is suggested to be 0.9m in width and 1.2m in height. The boards will be arranged in order of the paper in the final program. Tape and other materials will be provided on site, and volunteer-assistants will give necessary help. Posters are required to be condensed and attractive. The characters should be large enough so that they are visible from 1 meter apart.
- Please note that during your poster session, the author should stay by your poster paper to explain and discuss your paper with visiting delegates.

2022 国际制导、导航与控制学术会议程序一览表

ICGNC 2022 Technical Program, Thursday, August 4, 2022	
12:00-20:00 International Convention Centre (哈尔滨 华旗 国际会议中心 大堂) 注册/Registration	
ICGNC 2022 Technical Program, Friday, August 5, 2022	
08:30-22:00 International Convention Centre (哈尔滨 华旗 国际会议中心 大堂) 注册/Registration	
09:00-11:30 Room 501, 5 th Floor (国际会议中心 5 层 501 厅) (Chair: Tao Zhang 张涛 Tsinghua University) GNC National-level Model Teacher Forum (GNC 国家级教学名师论坛): Innovation and Practice of GNC Education (GNC 教育创新与实践)	
09:00-09:50 Wanliang Wang 王万良 Zhejiang University of Technology	Exploring the Construction of National Virtual Teaching and Research Office for Artificial Intelligence Course
09:50-10:40 Xiaobei Wu 吴晓蓓 Nanjing University of Science and Technology	Thoughts on the Reconstruction of Teaching Content of Automation Specialty—Take the Teaching Reform of “Automatic Control Principle” as an Example
10:40-11:30 Li Shi 师丽 Tsinghua University	Rethinking of Automatic Control Expertise Architecture in the Era of Big Data and Artificial Intelligence
11:30-13:00 Western restaurant, 5 th Floor (华旗饭店 5 层西餐厅) 自助午餐/Lunch	
13:00-17:10 Room 501, 5 th Floor (国际会议中心 5 层 501 厅) (Chair: Bin Jiang 姜斌 Nanjing University of Aeronautics and Astronautics) GNC Young Scientist Forum (GNC 青年科学家论坛): Frontiering Technologies in GNC (GNC 领域前沿技术)	
13:00-13:25 Long Cheng 程龙 Institute of Automation, Chinese Academy of Sciences	Recent Advances on Hand Rehabilitation Robots for Post-Stroke Patients
13:25-13:50 Hairong Dong 董海荣 Beijing Jiaotong University	Key Issues on Autonomous Train Control System
13:50-14:15 Junwei Han 韩军伟 Northwestern Polytechnical University	Visual Object Detection in Earth Observation System: Challenges and Solutions
14:15-14:40 Xiaolin Ning 宁晓琳 Beihang University	Latest Research Progress of Celestial Navigation Made by Beihang
14:40-15:05 Juntong Qi 齐俊桐 Shanghai University	Collaborative Control of Complex Unmanned Swarm System
15:05-15:30 Mengyi Wang 王蒙一 Beijing Institute of Electronic System Engineering	Rounding up Strategy against UAVs with High Speed and Great Maneuver
15:30-15:55 Ligang Wu 吴立刚 Harbin Institute of Technology	Intelligent Perception and Autonomous Control of Space Unmanned Systems
15:55-16:20 Hao Yang 杨浩 Nanjing University of Aeronautics and Astronautics	Fault Tolerant Game Control of Network Aircraft Systems
16:20-16:45 Junzhi Yu 喻俊志 Peking University	Vision-Based Underwater Localization and Autonomous Control of Bionic Hitchhiking Robotic Fish
16:45-17:10 Yonggang Zhang 张勇刚 Harbin Engineering University	Novel Kalman Filtering Algorithms and Applications for Underwater Navigation
18:00-20:00 Western restaurant, 5 th Floor (华旗饭店 5 层西餐厅) 自助晚餐/Dinner	
20:30-22:00 Room 416, 4 th Floor (国际会议中心 4 层 416 厅) TCGNC Member Meeting, CSAA (中国航空学会制导、导航与控制分会委员(含青年委员)工作会议)	

ICGNC 2022 Technical Program, Saturday, August 6, 2022

08:30-08:50 Victories Hall V1V2 (华旗礼堂 V1V2 厅) (Chair: **Yuxin Zhao** 赵玉新 Harbin Engineering University)

大会开幕式&GNC 国际期刊 2021 年度优秀论文颁奖/Opening Ceremony & GNC Best Paper Award Ceremony

08:50-09:40 Victories Hall V1V2 (华旗礼堂 V1V2 厅) (Chair: **Bin Jiang** 姜斌)

Plenary SpeechI (大会报告 I)

08:50-09:40 **Guangren Duan** 段广仁 中国科学院院士, IEEE Fellow, Harbin Institute of Technology Fully Actuated System Approach and Nonholonomic Systems

09:40-10:00 茶歇

10:00-11:40 Victories Hall V1V2 (华旗礼堂 V1V2 厅) (Chairs: **Zongxia Jiao** 焦宗夏, **Zhang Ren** 任章)

Plenary SpeechII (大会报告 II)

10:00-10:50 **Zili Wang** 王自力 中国工程院院士 Beihang University Comprehensive Design of General Quality Characteristics for Weapon Equipment
—Model-Based Reliability Systems Engineering in the Digital Era

10:50-11:40 **You He** 何友 中国工程院院士 Naval Aeronautical University Intelligent Perception and Fusion of Space-Borne Ocean Information

11:40-13:10 Western restaurant, 5th Floor, Victories Hotel or Victories Hall V3 (华旗饭店 5 层西餐厅 or 华旗礼堂 V3 厅) 自助午餐/Lunch

3 rd Floor Room 301 3 层会议室 301	3 rd Floor Room 302 3 层会议室 302	3 rd Floor Room 303 3 层会议室 303	3 rd Floor Room 305 3 层会议室 305	3 rd Floor Room 306 3 层会议室 306	3 rd Floor Room 307 3 层会议室 307	3 rd Floor Room 308 3 层会议室 308	4 th Floor Room 401 4 层会议室 401	4 th Floor Room 406 4 层会议室 406	4 th Floor Room 416 4 层会议室 416
13:30-15:30 SatA1 Robust Adaptive Control	13:30-15:30 SatA2 Aviation Airborne Systems I	13:30-15:30 SatA3 GNC (Spacecraft) I	13:30-15:30 SatA4 PHM Technology I	13:30-15:30 SatA5 GNC (Aircraft) I	13:30-15:30 SatA6 Intelligence Control I	13:30-15:30 SatA7 Intelligent Guidance & Control I	13:30-15:30 SatA8 Autonomous Control I	13:30-15:30 SatA9 Intelligent Navigation & Control I	13:30-17:00 SatA19 Best Paper
4 th Floor Room 407 4 层会议室 407	4 th Floor Room 408 4 层会议室 408	4 th Floor Room 411 4 层会议室 411	4 th Floor Room 415 4 层会议室 415	4 th Floor Room 418 4 层会议室 418	5 th Floor Room502 5 层会议室 502	5 th Floor Room503 5 层会议室 503	5 th Floor Room505 5 层会议室 505	4 th Floor Aisle 4 层廊厅	
13:30-15:30 SatA10 GNC (Missile) I	13:30-15:30 SatA11 GNC (Hyper- sonic Vehicle) I	13:30-15:30 SatA12 PNT Technology	13:30-15:30 SatA13 Automatic La- nding Control	13:30-15:30 SatA14 AAR Technology	13:30-15:30 SatA15 US Swarm I	13:30-15:30 SatA16 US Swarm III	13:30-15:30 SatA17 GNC Education I	13:30-15:30 SatA18 Poster Session 1	
15:30-15:50 茶歇/Tea Break									
3 rd Floor Room 301 3 层会议室 301	3 rd Floor Room 302 3 层会议室 302	3 rd Floor Room 303 3 层会议室 303	3 rd Floor Room 305 3 层会议室 305	3 rd Floor Room 306 3 层会议室 306	3 rd Floor Room 307 3 层会议室 307	3 rd Floor Room 308 3 层会议室 308	4 th Floor Room 401 4 层会议室 401	4 th Floor Room 406 4 层会议室 406	
15:50-17:50 SatB1 Fault Diagnosis	15:50-17:50 SatB2 Aviation Airborne Systems II	15:50-17:50 SatB3 GNC (Spacecraft) II	15:50-17:50 SatB4 PHM Technology II	15:50-17:50 SatB5 GNC (Aircraft) II	15:50-17:50 SatB6 Intelligence Control II	15:50-17:50 SatB7 Intelligent Guidance & Control II	15:50-17:50 SatB8 Autonomous Control II	15:50-17:50 SatB9 Intelligent Navigation & Control II	

4th Floor Room 407 4 层会议室 407	4th Floor Room 408 4 层会议室 408	4th Floor Room 411 4 层会议室 411	4th Floor Room 415 4 层会议室 415	4th Floor Room 418 4 层会议室 418	5th Floor Room502 5 层会议室 502	5th Floor Room503 5 层会议室 503	5th Floor Room505 5 层会议室 505	4th Floor Aisle 4 层廊厅	
15:50-17:50 SatB10 GNC (Missile) II	15:50-17:50 SatB11 GNC (Hyper- sonic Vehicle) II	15:50-17:50 SatB12 Navigation Technology I	15:50-17:50 SatB13 Civil Aircraft	15:50-17:50 SatB14 Human- machine Cooperation	15:50-17:50 SatB15 US Swarm II	15:50-17:50 SatB16 US Swarm IV	15:50-17:30 SatB17 GNC Education II	15:50-17:50 SatB18 Poster Session 2	
18:00-22:00 Victories Hall V1V2V3 (华旗礼堂 V1V2V3 厅) 晚宴 & ICGNC2022 Best Paper Awards 颁奖									

ICGNC 2022 Technical Program, Sunday, August 7, 2022

08:00-09:40 Victories Hall V1V2 (华旗礼堂 V1V2 厅) (Chairs: **Yonggang Zhang** 张勇刚, **Shaoping Wang** 王少萍)

Plenary SpeechIII (大会报告 III)

8:00-8:50 **Jonathon Chambers** Fellow of the Royal Academy of Engineering, IEEE Fellow, Loughborough University

Robust Signal Processing for Navigation

8:50-9:40 **Hongjie Lei** 雷宏杰 Chief Expert, Xi'an Flight Automatic Control Research Institute, AVIC

Quantum Sensing and Autonomous PNT Technology

9:40-10:00 茶歇/Tea Break

10:00-11:40 Victories Hall V1V2 (华旗礼堂 V1V2 厅) (Chair: **Yingxun Wang** 王英勋 Beihang University)

GNC Chief Designer Forum (GNC 总师论坛): The Know-how of GNC in X Engineering Practice

10:00-10:10 **Ning Dai** 戴宁 Xi'an Flight Automatic Control Research Institute, AVIC Present Challenges and Engineering Methods of Helicopter Flight Control System Technology

10:10-10:20 **Bo Su** 苏波 China North Vehicle Research Institute

Development Trend and Research Situation of Ground Unmanned System

10:20-10:30 **Ning Yao** 姚宁 Beijing Institute of Control Engineering

New-Generation Control System Exploration in Agile Satellites

10:30-10:40 **Cong Ye** 叶聪 China Ship Scientific Research Center

Progress and Challenges of Deep-Sea Manned Submersible Technology and Application

10:40-10:50 **Zhibing Zhang** 张志冰 Shenyang Aircraft Design and Research Institute, AVIC Carrier-Based Aircraft Take-off and Landing Control

10:50-11:40 Interactive Discussion 互动交流

11:40-13:10 Western restaurant, 5th Floor, Victories Hotel (华旗饭店 5 层西餐厅) 自助午餐/Lunch

3 rd Floor Room 301 3 层会议室 301	3 rd Floor Room 302 3 层会议室 302	3 rd Floor Room 303 3 层会议室 303	3 rd Floor Room 305 3 层会议室 305	3 rd Floor Room 306 3 层会议室 306	3 rd Floor Room 307 3 层会议室 307	3 rd Floor Room 308 3 层会议室 308	4 th Floor Room 401 4 层会议室 401	4 th Floor Room 406 4 层会议室 406
13:30-15:30 SunA1 Nonlinear Control	13:30-15:30 SunA2 Control Theory I	13:30-15:30 SunA3 GNC (Spacecraft) III	13:30-15:30 SunA4 GNC (Aircraft) III	13:30-15:30 SunA5 Agricultural US	13:30-15:30 SunA6 Intelligence Control III	13:30-15:30 SunA7 Intelligent Guidance & Control III	13:30-15:30 SunA8 Autonomous Control III	13:30-15:30 SunA9 Perception & Localization
4 th Floor Room 407 4 层会议室 407	4 th Floor Room 408 4 层会议室 408	4 th Floor Room 411 4 层会议室 411	4 th Floor Room 415 4 层会议室 415	4 th Floor Room 418 4 层会议室 418	5 th Floor Room502 5 层会议室 502	5 th Floor Room503 5 层会议室 503	5 th Floor Room505 5 层会议室 505	4 th Floor Aisle 4 层廊厅
13:30-15:30 SunA10 Autonomous Control V	13:30-15:30 SunA11 Intelligent Perception	13:30-15:30 SunA12 Navigation Technology II	13:30-15:30 SunA13 Control & Simulation I	13:30-15:30 SunA14 Intelligent Decision	13:30-15:30 SunA15 US Swarm V	13:30-15:30 SunA16 Multi-agent System I	13:30-15:30 SunA17 GNC Education III	13:30-15:30 SunA18 Poster Session 3

15:30-15:50 茶歇/Tea Break

3 th Floor Room 301 3 层会议室 301	3 th Floor Room 302 3 层会议室 302	3 th Floor Room 303 3 层会议室 303	3 th Floor Room 305 3 层会议室 305	3 th Floor Room 306 3 层会议室 306	3 th Floor Room 307 3 层会议室 307	3 th Floor Room 308 3 层会议室 308	4 th Floor Room 401 4 层会议室 401	4 th Floor Room 406 4 层会议室 406
15:50-17:50 SunB1 Control Theory II	15:50-17:50 SunB2 Intelligent Computing	15:50-17:50 SunB3 GNC (Spacecraft) IV	15:50-17:50 SunB4 GNC (Aircraft) IV	15:50-17:50 SunB5 GNC Technology	15:50-17:50 SunB6 Intelligence Control IV	15:50-17:50 SunB7 Intelligent Guidance & Control IV	15:50-17:50 SunB8 Autonomous Control IV	15:50-17:50 SunB9 Intelligent Navigation & Control III

4th Floor Room 407 4 层会议室 407	4th Floor Room 408 4 层会议室 408	4th Floor Room 411 4 层会议室 411	4th Floor Room 415 4 层会议室 415	4th Floor Room 418 4 层会议室 418	5th Floor Room502 5 层会议室 502	5th Floor Room503 5 层会议室 503	5th Floor Room505 5 层会议室 505	4th Floor Aisle 4 层廊厅
15:50-17:50 SunB10 Autonomous Control VI	15:50-17:50 SunB11 Design & Simulation	15:50-17:50 SunB12 Navigation Technology IV	15:50-17:50 SunB13 Control & Simulation II	15:50-17:50 SunB14 Navigation Technology V	15:50-17:50 SunB15 US Swarm VI	15:50-17:50 SunB16 Multi-agent System II	15:50-17:30 SunB17 GNC Education IV	15:50-17:50 SunB18 Poster Session 4
18:00-20:00 Western restaurant, 5 th Floor, Victories Hotel (华旗饭店 5 层西餐厅) 自助晚餐/Dinner								

大会报告 (Plenary Speeches)

大会报告 I (Plenary Speech I)

Time: 08:50-09:40, August 6, 2022

Venue: Victories Hall V1V2 (华旗礼堂 V1V2 厅)

Fully Actuated System Approach and Nonholonomic Systems

Professor Guangren Duan 段广仁

Academician of Chinese Academy of Sciences

Southern University of Science and Technology

Harbin Institute of Technology

Abstract

Inspired by the practical mechanical fully actuated systems, the fully actuated system (FAS) approach has been recently proposed for general dynamical control system designs. The approach is parallel to the well-known state-space one, and has found its great power in dealing with control of complicated nonlinear dynamical systems, including the time-varying nonlinear systems with time-varying delays. In this talk, the background and the development of the FAS approach are briefly outlined, and then applications of the FAS approach to a type of nonholonomic systems, motivated by the basic Brockett's two example systems both with the backgrounds of moving object control, are discussed. New point views and concepts are presented from the FAS approach angle.



Guangren Duan received his Ph.D. degree in Control Systems Sciences from Harbin Institute of Technology, Harbin, P. R. China, in 1989. After a two-year post-doctoral experience at the same university, he became professor of control systems theory at that university in 1991. He is the founder and the Honorary Director of the Center for Control Theory and Guidance Technology at Harbin Institute of Technology, and recently he is also in charge of the Center for Control Science and Technology at the Southern University of Science and Technology. He visited the University of Hull, the University of Sheffield, and also the Queen's University of Belfast, UK, from December 1996 to October 2002, and has served as Member of the Science and

Technology Committee of the Chinese Ministry of Education, Vice President of the Control Theory and Applications Committee, Chinese Association of Automation (CAA), and Associate Editors of a few international journals. He is currently an Academician of the Chinese Academy of Sciences, and Fellow of CAA, IEEE and IET. His main research interests include parametric control systems design, nonlinear systems, descriptor systems, spacecraft control and magnetic bearing control. He is the author and co-author of 5 books and over 380 SCI indexed publications.

大会报告 II (Plenary Speech II)

Time: 10:00-11:40, August 6, 2022

Venue: Victories Hall V1V2 (华旗礼堂 V1V2 厅)

Comprehensive Design of General Quality Characteristics for Weapon Equipment—Model-Based Reliability Systems Engineering in the Digital Era

Professor Zili Wang 王自力

**Academician of Chinese Academy of Engineering
Beihang University**

Abstract

Facing to the national strategy “Make China Strong on Quality”, this report provides a systematic elucidation on “Comprehensive Quality View” on Three Dimensions and the viewpoint of technological change in quality with “Strengthen Quality Design”. Then, the birth and architecture of Reliability Systems Engineering (RSE) is reviewed, and its current development (i.e. model-based reliability systems engineering method) is highlighted. Afterwards, the development status of RSE in China is presented in details, including the first successful applications of using RSE in J-10 aircrafts and the innovative practice in aircraft carriers. Furthermore, the advancement of reliability digital engineering in China is introduced combined with the development of digital and intelligent technologies. Finally, the future of RSE development is prospected from the aspects of modeling, intelligence and microminiaturization, respectively.



Zili Wang, was born in 1964, Academician of Chinese Academy of Engineering, Professor and PhD supervisor of Beihang University. Currently, he is the Director of Reliability Center of Weapon Equipment, also Director of National Defense Key Laboratory of Science and Technology on Reliability and Environmental Engineering. He has been engaged, for a long time, in theoretical researches of reliability systems engineering (RSE) and management practice of national major projects. He puts forward the synthesis and integration theory of reliability, and develops the corresponding software platform. The achievement of RES has already been applied to more than 20 key projects and more than 100 units in the top 10 military industrial group. He served as Chief Scientist in 2 national “973” projects, published 140+ high level academic papers and 7 books, authorized more than 40 invention patents, guided 80+ PhD candidates and master students as supervisors. He also won the second prizes of National Science and Technology Progress Award 2 times, first prizes of Provincial Science and Technology award Progress Award 4 times as the first accomplisher, and the grant prizes of National Science and Technology Progress Award 2 times as the team leader.

Intelligent Perception and Fusion of Space-Borne Ocean Information

Professor You He 何友
Academician of Chinese Academy of Engineering
Naval Aeronautical University

Abstract

Space-borne platforms have significant advantages in the context of search in global ocean areas, fine identification, continuous observation, and rapid response of marine targets. With the development of satellite platforms and sensor technologies, marine surveillance using space-borne platforms is characterized by the network, intelligence, and onboard fusion. This report mainly contains the present situation, key technology research, and the prospect of marine intelligence sensing and fusion with space-borne platforms. The research difficulties and directions of marine intelligence sensing and information fusion based on space-borne platforms are detailedly analyzed. The multi-source satellite remote sensing technologies of marine intelligent detection, intelligent recognition, correlation tracking, and other key technologies are elaborately introduced combined with the research results of our team. Finally, the future development of marine intelligent sensing and fusion of space-borne information is discussed.



You He is a Fellow Member of the Chinese Academy of Engineering. He received his Ph.D. degree from the Department of Electronic Engineering at Tsinghua University, Beijing, China, in 1997. He is a delegate of the 17th CPC National Congress, a member of the 12th CPPCC National Committee, and a National Outstanding Teacher. He is a CAAI/CIE/CAA/CIC/CSF/IET Fellow, a member of the Subject Appraisal Group of The State Council, a member of the Review Committee of the National Science Foundation for Distinguished Young Scholars, a member of the Advisory Expert Committee of the Information Division of the National Natural Science Foundation of China, Vice President of Chinese

Association for Artificial Intelligence, Honorary Vice President of the Chinese Society of Aeronautics and Astronautics, Vice President of Chinese Institute of Command and Control, Executive Director of Chinese Institute of Electronics and Chinese Society of Aeronautics and Astronautics, Chair of Information Fusion Branch of Chinese Society of Aeronautics and Astronautics, etc. His research interests include signal detection, information fusion, intelligent technologies and their applications. As the first accomplisher, Dr. He has won 4 second prizes of the National Scientific and Technological Progress Award, 1 first and 1 second prizes of the National Teaching Achievement Award, and 11 provincial/ministerial awards, obtained the National 100 Excellent Doctoral Dissertation Award, more than 60 Chinese invention patents, and software Copyrights. He has published more than 260 academic papers and 6 books with more than 20,000 citations. He has advised more than 180 post-doctoral, doctoral, and master students. Dr. He was selected for the National Talent Project and won the HeLiangHeLi Foundation Science and Technology Progress Award, the “Qiushi” Project Award, and the National Achievement Award for Returned Overseas Students. Dr. He is a recipient of the top prize in science and technology of Shandong Province.

大会报告 III (Plenary Speech III)

Time: 08:00-09:40, August 7, 2022

Venue: Victories Hall V1V2 (华旗礼堂 V1V2 厅)

Robust Signal Processing for Navigation

Professor Jonathon Chambers

Fellow of the Royal Academy of Engineering

University of Leicester, UK

Abstract

This talk covers key results from more than ten years of successful collaboration between the navigation group within the College of Intelligent Systems Science & Engineering at Harbin Engineering University and myself. It describes work reported in what was judged to be the best paper in the IEEE Transactions on Aerospace and Electronic Systems and received the M. Barry Carlton Award in 2022. In particular, the exploitation of heavy-tailed distributions and various mathematical methods has led to new algorithms which have been demonstrated to behave robustly in hostile environments.



Jonathon Chambers was born in 1960. He received Ph.D. and DSc degrees in signal processing and engineering from Imperial College, London, UK, in 1990 and 2014. He is Emeritus Professor in the School of Engineering, University of Leicester, after serving as the Head of School between 2017 and 2019, and has been Guest Professor and International Honorary Dean in the College of Intelligent Systems Science and Engineering, Harbin Engineering University. His research interests include Signal Processing and Machine Learning and their applications. Dr. Chambers is Fellow of the Royal Academy of Engineering, UK, and Fellow of IEEE. He has served as the advisor to almost 100 PhD graduates, more than 20 from China. He is the co-

recipient of the IEEE M. Barry Carlton Award in 2022 and runner-up in 2021 with the navigation group at Harbin Engineering University, and in 2021 the co-recipient of the IET Networks Premium Award for the paper entitled “Multi-objective-based feature selection for DDoS attack detection in IoT networks”.

Quantum Sensing and Autonomous PNT Technology

Professor Hongjie Lei 雷宏杰

Chief Expert of AVIC

Aviation Industry Corporation of China

Abstract

The second quantum revolution based on quantum state manipulation will lead to disruptive innovation in technology, promoting the renewal of aviation equipment and the improvement of operational efficiency. Starting with the development and requirements of aviation inertial navigation, this speech introduces the research field of quantum sensing and measurement. In addition, the development of typical quantum sensing and measurement devices is also described, such as nuclear magnetic resonance gyroscope and chip-scale atomic clock based on hot atom sensing, atom interference gravimeter and atom interference gyroscope based on cold atom sensing, resonant optical quantum gyro and optical quantum atmospheric motion parameter measurement system based on optical quantum detection. Finally, the development trend and plan of aviation quantum sensor, aviation quantum navigation system and high precision autonomous PNT technology are presented.



Hongjie Lei was born in 1970. He is the Head of GNC Department of AVIC, President of Xi'an Flight Automatic Control Research Institute, Chief Expert of AVIC, Expert of the Science and Technology Commission of CMC, Director of Aviation Key Laboratory of Science and Technology on Inertial Technology, the fifth batch of "Three Five Talents" in Shaanxi Province, Member of the Navigation, Guidance and Control Branch of CSAA, Secretary of the Professional Technical Group of the Chinese Society of Inertial Technology, and has been selected into the National Talent Project in 2020. As the discipline leader of inertial navigation of Xi'an Flight Automatic Control Research Institute, He led the team to successfully make a number of breakthroughs in navigation technology, completed the engineering research and development process of related products. He won Science and Technology Progress Award of AVIC for many times, owning high-level ability of professional technology and team leadership. At present, under the leadership of Mr. Lei Hongjie, the navigation system and related technologies developed by the Institute have been successfully applied in various types of aircraft and the field of aerospace measurement and control in China.

总师论坛

Chief Designer Forum

Subject(X)=GNC 在 X 工程实践中的诀窍

(X ∈ 航空 or 航天 or 航海)

Subject (X)=The Know-how of GNC in X Engineering Practice

(x ∈ Aeronautics or Astronautics or Marine)

Time: 10:00-11:40, August 7, 2022

Venue: Victories Hall V1V2 (华旗礼堂 V1V2 厅)

Chair: Yingxun Wang 王英勋

制导、导航与控制(Guidance, Navigation and Control, GNC)作为核心中枢,在航空、航天、航海等领域发挥重要作用,并有着广阔的发展前景。本论坛邀请来自于航空、航天、航海领域的5位知名总师将分享他们在各领域中有关GNC在典型工程中问题的解决之道,即有效解决某问题的诀窍,可能只是捅破一层窗户纸。来自一线总师们的倾情讲述和与现场互动,将向大家揭示GNC工程创新中蕴含的哲学和科学道理。

Guidance, Navigation and Control (GNC) is the key technology for movement objects applied in aeronautics, astronautics, and marine. This forum invites five well-known Chief Designers from the fields of aeronautics, astronautics, and marine to share their good ideas to effectively solve any typical engineering and technical problems related to GNC in their research field. The wonderful presentation and on-site interaction of the front-line Chief Designers will reveal the philosophy and scientific principle contained in the GNC engineering innovation.

About the Chair

Professor Yingxun Wang 王英勋

Institute of Unmanned System

Beihang University, China



Yingxun Wang is a professor and doctoral supervisor in Beihang University, Beijing, China. He is currently the president of Institute of Unmanned System and Yunnan Innovation Institute in Beihang University. He is also the council member of China Society of Aeronautics and Astronautics, the director of UAV system professional group in China AOPA UAV professional committee, and the appointed representative of UAV driver. He used to be director of UAV Office in Aviation Industry Corporation of China (AVIC). He is engaged in autonomous control of UAV, key model development and project management, and served as the deputy chief designer and chief designer. He has obtained IPMP senior project manager qualification and INCOSE Certified System Engineer lecturer. He won the first prize of national science and technology progress (R3), the outstanding young engineer of Beijing, the pacesetter of economic and technological innovation of Beijing, and the gold medal of AVIC.

Present Challenges and Engineering Solutions of Helicopter Flight Control System Technology

Professor Ning Dai 戴宁

Xi'an Flight Automatic Control Research Institute, AVIC

Abstract

According to the aerodynamic characteristics of helicopter, the rotor system is not only the lifting surface, but also the control surface. The control coupling is complex. The technical difficulty of helicopter flight control system is great, and its technical development process is far behind that of fixed wing aircraft flight control system. With the development of technology, these problems have been solved one by one. Helicopter flight control system has experienced SAS\CSAS and gradually entered the era of fly by wire control system. This paper introduces the system configuration, main characteristics of various types of helicopter flight control systems.

However, because helicopters need to fly close to the ground in complex terrain environment and perform search and rescue tasks, pilots need to allocate their main attention to the observation flight environment, the pilot's workload is still heavy. Therefore, AI is applied to helicopter flight control as the “second pilot” to simplify the pilot's control actions, such as issuing commands by voice so as to minimize the pilot's workload. It is one of the main development trends of helicopter flight control technology.



Ning Dai, Deputy chief engineer of helicopter flight control specialty of FACRI, and special technical expert of AVIC. He has been engaging in research for flight control for a long time, is the deputy chief designer for multiple types of helicopter flight control system, obtained many technological innovations, and successively won the “aviation serving the country Pioneer Award” and other awards.

Development Trend and Research Situation of Ground Unmanned System

Professor Bo Su 苏波

China North Vehicle Research Institute

Abstract

The ground unmanned system has experienced the development stage of autonomous driving and unmanned combat vehicles, and is in the period of cluster collaborative application. With the transformation of application requirements and technical characteristics, the ground unmanned system is about to usher in the stage of practical application; By comparing the technology and application characteristics of the U.S. and Russia's ground unmanned systems, the report explores the factors that form the leading edge, finds out the gap between China's ground unmanned systems and the key links that need to be developed at present, and then discusses the development trend and prospects of technology in this field, and puts forward thoughts on future development.



Bo Su, Ph.D., researcher. Chief scientist in the field of ground unmanned systems of China North Industries Group Corporation, member of the Science and Technology Committee of China Northern Vehicle Research Institute, and chief engineer of the Unmanned Vehicle R&D Center (UVC). Vice-chairman of the Robot Branch of the Chinese Society of Mechanical Engineering, vice-chairman of the Ground Machine System Professional Committee of the Chinese Agricultural Machinery Society, senior member of the Chinese Academy of Ordnance Engineering, member of the Unmanned Systems Professional Committee of CICC, and enjoys special government allowances. Mainly engaged in the research of ground unmanned systems, bionic robots and planetary vehicles, presided over more than 70 ground unmanned system projects, won 7 scientific and technological progress awards above the ministerial level, more than 60 national invention patents, and published more than 70 papers. “Planet rover mobile system” and other monographs.

New-Generation Control System Exploration in Agile Satellites

Professor Ning Yao 姚宁

Beijing Institute of Control Engineering

Abstract

High resolution, large-scale rapid flexible observation is the characteristics of new-generation of agile remote-sensing satellites. The control system should not only realize agile maneuver, but also eliminate the influence of large actuators on high-resolution payloads, i.e., achieve ultra-high agility, stability and precision control. High-precision control of agile satellites is one of the difficulties in space technology research at home and abroad in recent years. In order to solve the contradiction between fast maneuvering and high-precision control, targeted design and engineering implementation are carried out for controllable and observable ultra-quiet platform with fast adjustment ability, which improves the pointing control accuracy and pointing stability of satellites by 1~2 orders of magnitude. At the same time, autonomous orbit control and in-orbit imaging mission planning greatly improve the efficiency of observation mission.

The report introduces the technological breakthrough and engineering realization of new-generation of agile remote sensing satellite control system in China.



Ning Yao has been engaging in research for attitude orbit control system (AOCS) of satellites for a long time, and is a deputy for a series of remote satellites. She led her team to solve the integrated control technical problems for many satellites such as under-actuated control, agile satellites development based on control moment gyroscopes, and active pointing ultra-quiet platform design. She got national defense science progress awards and aerospace science and technology group progress awards for several times.

Progress and Challenges of Deep-Sea Manned Submersible Technology and Application

Professor Cong Ye 叶聪

China Ship Scientific Research Center, CSSRC

Abstract

Introducing the latest progress and the main achievements of deep-sea manned submersible technology and application in China. Through R&D of threesubmersibles, Jiaolong, Shenhai yongshi and Fendouzhe, most of key technologies in this field have been conquered, such as materials, energy, devices and operation. 10,000-meter manned submergence is no longer arisk, but a regular scientific expedition. Subsequently, deep submergence operation will enteran era of systematic capacity. Especially, larger-scale collaborative networking throws down new challenges to sensing, communication, positioning, navigation, control and other technologies.



Cong Ye, Deputy director of CSSRC. He has been engaging in the development of manned submersibles. His main research objects are the general design method of submersibles and pressure-resistant structural theory. Cong Ye has taken part in the sea trials and expeditions of manned submersibles as chief pilot and commander-in-chief. He is the chief designer for full ocean deep mannedsubmersible, Fendouzhe. He has received the first prize of National Science and Technology Progress Award and was honoured “Hero of Manned Submergence” by the CPC Central Committee and the State Council.

Carrier-Based Aircraft Take-off and Landing Control

Professor Zhibing Zhang 张志冰

Aviation Industry Corporation of China, Shenyang Aircraft Design & Research Institute

Abstract

Carrier-based aircraft is the offensive strike force and basic defense means of a carrier battle group, as well as the core equipment of air combat. Carrier-based aircraft should not only possess the same characteristics as land-based aircraft, but also have excellent low-speed take-off and landing control characteristics under some constraints, such as flight deck constraint. The process of take-off and landing is a multi-variable dynamic stability control process involving man-aircraft-ship under multi-disturbance conditions. Therefore, the design of the take-off and landing control system is one of the core difficulties in the development of carrier-based aircraft. This report will start from a brief introduction to the development process of carrier-based aircraft take-off and landing control technology, and introduce the dynamics modeling and analysis, the design of take-off and landing control system, respectively. Then, the report focuses on the advanced landing control technology. Finally, some prospects for the further development of take-off and landing control technology are mentioned.



Zhibing Zhang was born in 1973. He is chief expert of AVIC in the field of aircraft management system, professor, deputy director and deputy chief designer of Shenyang Aircraft Design and Research Institute, recipient of special government allowance of the State Council. He is the chief designer of a certain type aircraft, deputy chief designer of multiple types advanced aircrafts and technical leader of two demonstration and validation projects. He has been engaging in the research for flight control/aircraft management system for a long time, and made significant contributions to the development of multiple types carrier-based aircraft. As the technical leader of his team, he has conquered many key technologies in flight control and aircraft management technical fields such as carrier-based aircraft take-off and landing flight control, distributed flight management system architecture, multi-means fusion guidance algorithms. Meanwhile, he has accumulated rich theoretical and engineering experience, and published many high-level papers, and obtained a number of national patent authorizations. For his outstanding contributions, he has won special prize of “National Science and Technology Progress Award”, 2nd and 3rd prizes of “National Defense Science and Technology Progress Award”, 1st and 3rd prizes of “Aviation Industry Science and Technology Progress Award”, and been awarded 1st, 2nd and 3rd class “Aviation Industry Individual Merit”, “Shenyang Labor Day Medal”.

GNC 国家级教学名师论坛

GNC National-level Model Teacher Forum

GNC 教育创新与实践

Innovation and Practice of GNC Education

Time: 09:00-11:30, August 5, 2022

Venue: Room 501, 5th Floor (国际会议中心 5 层 501 厅)

Chairs: Tao Zhang 张涛

科技创新，教育为本。制导、导航与控制（GNC）学科的创新人才培养是我国在GNC领域蓬勃发展的重要基础和关键。本届制导、导航与控制教学名师论坛非常荣幸地邀请了来自国内著名高校的3位国家级教学名师作特邀报告，国家教学名师们将与我们分享现代GNC教育中的新模式、新理念和新方法，以及他们在教育实践中的宝贵经验和体悟。

Education is to last for the scientific and technological innovation generations. The cultivation of innovative talents in the discipline of guidance, navigation and control (GNC) plays a significant role in the vigorous development of GNC in China. GNC Model Teacher Forum invites three national model teachers to share the innovation patterns, concepts and methodologies in modern GNC education, as well as their valuable experience and understanding in educational practice.

About the Chair

Professor Tao Zhang 张涛

School of Information Science and Technology

Head of Department of Automation

Tsinghua University



Tao Zhang, PhD, Professor, Vice Dean of School of Information Science and Technology, Head of Department of Automation, Tsinghua University. He is a member of Electronic Science and Technology Committee of Ministry of Industry and Information Technology, Invited Expert of Ministry of Science and Technology, Director of Intelligent System Key Laboratory of Beijing National Research Center for Information Science and Technology. He is IET Fellow, IEEE Senior Member, Member of IFAC Technical Committee of Robotics, AIAA member, Technical Editor of IEEE/ASME Transactions on Mechatronics. He is a council member of Chinese Association of Automation,

a council member of Chinese Association for Artificial Intelligence, director of Education Committee of Chinese Association of Automation, deputy director of Professional Committee of Space and Motion Control of Chinese Association of Automation, member of Guidance, Navigation and Control Branch of Chinese Society of Aeronautics and Astronautics. The main research fields are robotics, artificial intelligence, navigation and control, etc. He has presided over or participated in more than 30 research projects, such as national 863 projects, national 973 projects and National Natural Science Foundation. More than 200 papers have been published in the past decade. He has published more than 10 academic monographs, translated works and edited textbooks, and obtained more than 20 domestic authorized invention patents. He has won the National Teaching Achievement award, Graduate Teaching Achievement Award of China Academic Degree and Graduate Education Association, Education Achievement Award of Chinese Association of Automation, Beijing Teaching Achievement Award, Natural Science Award of Ministry of Education, Military Science and Technology Progress Award, Natural Science Award of Chinese Association of Automation and Electronic Information Science and Technology Award of Chinese Institute of Electronics, etc.

Exploring the Construction of National Virtual Teaching and Research Office for Artificial Intelligence Course

Professor Wanliang Wang 王万良

College of Computer Science and Technology, Zhejiang University of Technology

Abstract

Currently the world has entered the era of artificial intelligence +, AI has become the core of many high-tech products, is the key technology to seize the high ground of industrial development. In view of the current urgency of AI talent training, we introduce the construction plan and objectives of the National AI Virtual Teaching and Research Office (AIVTRO), explore the AI professional talent training system, introduce the construction experience of the national first-class AI courses, and discuss the main contents and the way to carry out the AI course thinking and politics with the example of AI course thinking and politics.



Wanliang Wang, Ph.D., Professor, recipient of the National Teaching Master Award, the first batch of teaching master of the National Ten Thousand People Plan, expert of the special allowance of the State Council Government, outstanding teacher of Zhejiang Province. He is currently the director of the key laboratory of Zhejiang Visual Media Intelligence Handling Technology Research, the head of the “Introduction to Artificial intelligence” on the national online level courses, and the person in charge of the National Virtual Teaching and Research Office of the National Virtual Teaching and Research Office of the Artificial Intelligence Course. He is a member of the Teaching and Guidance Committee of the Computer Professional Teaching Society of the Ministry of Education, a director of the Chinese Artificial Intelligence Society, the director of the Natural Computing and Digital Smart City Professional Committee, a director of the China Automation Society, the director of the Smart Education Professional Committee, and the Big Data and Artificial Intelligence Category of High Schools in Zhejiang Province. Director of the Professional Teaching Guidance Committee, vice chairman of the Zhejiang Computer Society, vice chairman of the Zhejiang Provincial Artificial Intelligence Society, and chairman of the Hangzhou Computer Society. As the first prize winner, he won two national teaching achievements awards, and the edited artificial intelligence textbook won the second prize of the first National Outstanding Textbook Award.

Thoughts on the Reconstruction of Teaching Content of Automation Specialty

—Take the Teaching Reform of “Automatic Control Principle” as an Example

Professor Xiaobei Wu 吴晓蓓

Nanjing University of Science and Technology

Abstract

Focusing on the teaching problems in training automation professionals, this report analyzes the deficiencies faced by the existing knowledge system of automation discipline and introduces new ideas to the reconstruction of the knowledge system of automation discipline and the training of ability and quality. Taking the knowledge module teaching of control principle as an example, the reporter proposes a new teaching system and teaching organization form, which integrates the traditional classical control principle, modern control theory, the widely used and relatively mature advanced control principle and method to realize knowledge updating and cognitive iteration. We hope to promote the innovation of the teaching content in automation major, keep pace with the times, and cultivate more professionals needed for social needs.



Xiaobei Wu, the winner of The National Outstanding Teacher Award, is a professor at the School of Automation, Nanjing University of Science and Technology. She graduated from East China Institute of Engineering (now Nanjing University of Science and Technology), majoring in the servo system, in 1982 and has been teaching related courses since then. She has been engaged in teaching and scientific research in the field of control science and engineering for a long time. Winner of 2 times second prizes and 3 times third prizes in national defense science and technology, she also won a first prize and other 2 times second prizes for national teaching achievements, once

special prize, and 2 times first prizes for provincial teaching achievements. She works now as the head of the national first-class "Control Engineering Foundation" course and the head of the first batch of national virtual teaching and research offices. Currently, she is the Executive Director of the China Artificial Intelligence Association, and Chairman of the Special Committee of Intelligent Detection and Motion Control.

Rethinking of Automatic Control Expertise Architecture in the Era of Big Data and Artificial Intelligence

Professor Li Shi 师丽

Department of Automation, Tsinghua University

Abstract

The rapid development of big data and artificial intelligence has led to huge changes in all fields, including the field of automation. This is not only a challenge but also an opportunity. How to keep the core knowledge structure while introduce this new force to make this field more sustainable and developed? How to continue the lead the new era of science and technology as a researcher in the field of automation? Facing such pressure and challenges, Tsinghua University advocates organized teaching. The Teaching Committee of the Department of Automation has held more than a dozen seminars on special topics or sub-courses since the spring of 2020. This presentation provides a rethinking about the architecture of automation expertise based on modeling approaches, principles/theories, design approaches and engineering implementations on how to adapt to the development of new technologies such as big data and artificial intelligence.



Li Shi received her bachelor's and master's degrees in Automatic Control from the Department of Electronics, Dalian University of Technology, and her doctor's degree from the School of Mechatronics, Shanghai University. From 1988 to 2014, she engaged in teaching and research work as doctoral supervisor in School of Electrical Engineering, Zhengzhou University. In 2014, she transferred to the Department of Automation, Tsinghua University as a talent introduction. In Tsinghua University, she mainly worked on research works and the teaching of Process Control and Adaptive Control Theory and Application. Her research interests include:

Biological visual information processing mechanism, analyzing the neural circuit of visual information transmission and information processing mechanism of birds, modeling the information encoding of avian visual neural system; Brain-like model and brain-like model-based machine learning, proposing a novel and more efficient brain-like model and algorithm for target recognition; Perceptual decision-making and cognitive abilities enhancing, study the information transmission circuits and information fusion brain regions in the process of multiple information fusion and cognition; Dynamic visualization of brain regions and neural circuits activated in different working scenarios through multi-information registration and neuron tracing; Research on interactive brain-computer-interface-based human-machine joint control; Research and develop active rehabilitation training system for the disabled. She has led more than 30 national and provincial key projects, such as the Military 863 Project, the key innovation Project of the Military Science and Technology Commission, the sub-projects of national Major Special Projects, the National Natural Science Foundation of China, the Doctoral Fund of the Ministry of Education and the Outstanding Talents Plan of Henan Province. She is honored with National Outstanding Teacher, National Model Teacher, Special Prize of Baogang Outstanding Teacher.

GNC 青年科学家论坛
GNC Young Scientist Forum
GNC 领域前沿技术

Frontiering Technologies in GNC

Time: 13:00-17:10, August 5, 2022

Venue: Room 501, 5th Floor (国际会议中心 5 层 501 厅)

Chair: Bin Jiang 姜斌

青年是科技创新的主力军，为激发青年科技工作者在GNC领域的创新活力，本届国际会议邀请了10位杰出青年才俊，将围绕GNC学科领域的前沿热点和关键技术展开研讨和切磋，为广大青年科技工作者提供一个科技榜样引领示范和高端的GNC学术交流平台。

Youth is the main force of scientific and technological innovation. In order to stimulate the creativity of young scientist in the field of guidance, navigation and control (GNC), this forum invites ten outstanding young scientists to discuss the research focus of frontier fields and key technologies in the field of GNC, which aiming to provide a scientific and technological example demonstration and a high-level GNC academic exchange platform to the young scientists.

About the Chair

Professor Bin Jiang 姜斌

College of Automation Engineering

Nanjing University of Aeronautics and Astronautics



Bin Jiang received the Ph.D. degree in Automatic Control from Northeastern University, Shenyang, China, in 1995. He had ever been postdoctoral fellow, research fellow, invited professor and visiting professor in Singapore, France, USA and Canada, respectively. Now he is a Chair Professor of Cheung Kong Scholar Program in Ministry of Education and Vice President of Nanjing University of Aeronautics and Astronautics, China. He serves as Associate Editor or Editorial Board Member for a number of journals such as IEEE Trans. On Cybernetics; IEEE Trans. On Control Systems Technology, Neurocomputing; Journal of Astronautics, etc. He is a Fellow of IEEE, Chair of Control Systems Chapter in IEEE Nanjing Section, a member of IFAC

Technical Committee on Fault Detection, Supervision, and Safety of Technical Processes. His research interests include fault diagnosis and fault tolerant control and their applications to helicopters, satellites and high-speed trains. He has been the principle investigator on several projects of National Natural Science Foundation of China. He is the author of 8 books and over 100 referred international journal papers. He won Second Class Prize of National Natural Science Award of China in 2018.

Recent Advances on Hand Rehabilitation Robots for Post-stroke Patients

Professor Long Cheng 程龙

Institute of Automation, Chinese Academy of Sciences

Abstract

Post-stroke patients pay most attention to the upper-/lower-limb rehabilitation and neglect the rehabilitation training of the hand. However, hand is the most important execution organ of human beings, which plays a critical role in daily lives. Meanwhile, the area charging the hand motor in the human's brain is large. Therefore, the study on the hand rehabilitation robot can help the function recovery of patients' hands and improve their brain plasticity, which is valuable theoretically and practically. This talk is going to introduce the mechanism design and optimization techniques of the motion-compatible hand rehabilitation robot to ensure the comfortable and safe use of the robot. In addition, some novel impedance control algorithms are presented to realize the passive/active rehabilitation training.



Long Cheng received the B.S. (Hons.) degree in control engineering from Nankai University, Tianjin, China, in 2004, and the Ph.D. (Hons.) degree in control theory and control engineering from the Institute of Automation, Chinese Academy of Sciences, Beijing, China, in 2009. He is currently a Full Professor with the Institute of Automation, Chinese Academy of Sciences. He is also an adjunct Professor with University of Chinese Academy of Sciences. He has published over 100 technical papers in peer-refereed journals and prestigious conference proceedings. He was a recipient of the IEEE Transactions on Neural Networks Outstanding Paper Award from IEEE

Computational Intelligence Society, the Aharon Katzir Young Investigator Award from International Neural Networks Society and the Young Researcher Award from Asian Pacific Neural Networks Society. He is currently serving as an Associate Editor/Editorial Board Member of IEEE Transactions on Cybernetics, Neural Processing Letters, Neurocomputing, International Journal of Systems Science, and Acta Automatica Sinica. His current research interests include the rehabilitation robot, intelligent control and neural networks.

Key Issues on Autonomous Train Control System

Professor Hairong Dong 董海荣

State Key Laboratory of Rail Traffic Control and Safety

Beijing Jiaotong University, Beijing, China

Abstract

With the rapid development of high-speed railways in recent years, it has become the nation's fundamental transportation mode. An intelligent, networked, and autonomous railway becomes the inevitable requirement and trend for the future development of the intelligent high-speed railways. As a typical industrial and critical control system, the autonomous train control system has the characteristics of wide distributions, various operation scenarios, and discrete parameters. All these characteristics put forward higher requirements for the reliability and safety of the system. Here, the fundamental theories and key issues, such as intelligent perception, driving, rescheduling, and integration of dispatching and control in the autonomous train control system, are expounded in detail. Further, the technical difficulties and solutions are analyzed, and the future development directions are summarized.



Hairong Dong is currently a professor with the State Key Laboratory of Rail Traffic Control and Safety, and also the deputy director of the National Engineering Research Center for Rail Transportation Operation Control System, Beijing Jiaotong University, Beijing, China. Dr. Dong focuses on the research of intelligent control and operation of rail transit, and presided more than 30 national and ministerial-level projects, such as major projects of the National Natural Science Foundation of China. She has published more than 100 papers and has been granted more than 20 national invention patents. Dr. Dong was also awarded the second prize of the National Science and Technology Progress Award, the second prize of the Beijing Municipal

Science and Technology Progress Award, the second prize of the National Teaching Achievement Award, the first prize of the Beijing Teaching Achievement Award, Chinese Association of Automation Young Scientist Award, etc. She obtained the National Science Foundation for Distinguished Young Scholars of China and was enrolled in the Chang Jiang Scholars Program of China, Scientific and Technological Innovation Leading Talent of “Ten Thousand Plan”- National High Level Talents Special Support Plan. Dr. Dong serves as an Associate Editor of the IEEE Trans-ITS, IEEE Trans-IV, IEEE ITS Magazine, Journal of Intelligent & Robotic Systems, etc. She is currently the Fellow, Deputy Secretary-General, and Deputy Director of Control Theory Committee of the Chinese Automation Congress, the Chair of the Technical Committee on Railroad Systems and Applications of the IEEE Intelligent Transportation Systems Society.

Visual Object Detection in Earth Observation System: Challenges and Solutions

Professor Junwei Han 韩军伟

Northwestern Polytechnical University

Abstract

With the rapid development of remote sensing technologies, more and more remote sensing images with high spatial resolution are available. How to achieve the detection of objects of interest is one of central issues for earth observation systems. In this talk, by analyzing the characteristics of high-spatial-resolution remote sensing images (e.g., data massiveness, object diversity, and environmental complexity) and the applications, we first summarize several key challenges needed to be solved for visual object detection techniques, including the automatic labeling of large number of training samples, the extraction of rotation-invariant and high-level image features and so on. Then, focusing on the above-mentioned problems, we introduce a series of solutions by our research group.



Junwei Han, is currently a Professor in School of Automation, Northwestern Polytechnical University. He is also enrolled in the Chang Jiang Scholars Program of China, Scientific and Technological Innovation Leading Talent of “Ten Thousand Plan”- National High Level Talents Special Support Plan. His research interests include artificial intelligence, remote sensing image analysis, and brain pattern recognition. He has published more than 150 papers in top journals such as IEEE TPAMI, IJCV and so on and more than 30 papers in top conferences such as CVPR, ICCV, ACM Multimedia, MICCAI, IJCAI, etc. He is an Associate Editor for several international journals including IEEE TPAMI, IEEE TMM, and so

on. He is a Fellow of IEEE and IAPR.

Latest Research Progress of Celestial Navigation Made by Beihang

Professor Xiaolin Ning 宁晓琳

School of Instrumentation and Opt-electronic Engineering

Beihang University, Beijing, China

Abstract

The Celestial navigation is an autonomous navigation which determines the position, velocity and postuer of the spacecraft by observing the Celestial natural body. Compared with the Inertial navigation and GPS navigation, the navigation errors of Celestial navigation do not accumulate over time and it has a strong anti-interference capability, which made it attracted widespread attention in recent years. Since 1999, Beihang has taken the lead in the research of Celestial navigation methods in China and has proposed series noval Celestial navigation methods, such as the star refraction method using the refraction angle as the measurement to improve the navigation accuracy, the time differenced X-ray pulsar navigation method to eliminate the influence of the ephemeris error of the pulsars and the time differenced Doppler velocity method to eliminate the impact of the frequency fluctuation of the Sun, etc.

In this speech, we will introduce the latest research progress of Celestial navigation made by Beihang from the following three aspects:

- ① The starlight refraction navigation method based on the star pixel coordinates.
- ② The time differenced Celestial integrated navigation method to eliminate the time variant system errors.
- ③ Explorations of the new Celestial navigation method: the solar oscillation navigation.



Xiaolin Ning, was born in Shandong province, China, in 1979. She receieved the B.E. degree in computer science from Shangdong Teachers University, Shandong, China, in 2001, and the Ph.D degree in mechanical engineering from BeiHang University, Beijing, China, in 2008. Since 2008, she has been with the BeiHang University where she is currently a professor and a Distinguished Professor of Yangtze River Scholar with the Ministry of Education of China. In 2011 and 2013, she was selected into the New Century Excellent Talent Award program of the Ministry of education and the Youth Talents Program of Beijing colleges and universities respectively.

In 2017 she was honored as the National Science Fund for outstanding young people. In 2020, she has won the China Youth Science and Technology Award. She serves as the member of Chinese Society for Optical Engineering, the Committee of Deep Space Exploration Technology Chinese Society of Astronautics, Chinese Institute of Command and Control and Chinese Association of Automation. ect. Her currently research interests include the autonomous navigation for the spacecraft, magnetocardiogram and magnetoencephalography signal processing.

Collaborative Control of Complex Unmanned Swarm System

Professor Juntong Qi 齐俊桐

Shanghai University Artificial Intelligence Institute of Shanghai University

Institute of Robotics and Autonomous Systems of Tianjin University

Abstract

Unmanned system represented by autonomous vehicles and unmanned aerial vehicles (UAVs) has been playing an increasingly important role in various fields of production and life in recent years. With the increasing complexity of the task and the dynamic uncertainty of the environment, the unmanned system will develop towards swarm, autonomy and intelligence. The swarm control technology of the unmanned system will become more important for the development of the new generation of unmanned system. This report will share the characteristics, difficulties, technological breakthroughs and application prospects of swarm control technology based on the team's work in UAV and unmanned surface vehicle (USV).



Qi Juntong received the B.E. degree in automation from Tianjin University, Tianjin, China and the Ph.D. degree in pattern recognition and intelligent system from Shenyang Institute of Automation, Chinese Academy of Sciences, Shenyang, China, in 2004 and 2009, respectively.

He is a professor and doctoral supervisor of the Artificial Intelligence Institute of Shanghai University, the deputy director of the Institute of Robotics and Autonomous Systems of Tianjin University, the national Model Worker, the winner of the May 4th Medal for Chinese Youth, and a leading talent in science and technology entrepreneurship under the National Ten Thousand Talents Program. Over the years, he has been committed to the research and industrialization of autonomous control and swarm control technology for unmanned systems. He has undertaken more than 40 scientific research projects such as the National 863 Projects, the National Natural Science Foundation of China, the Aviation Science Foundation of China, etc. He has published 1 monograph and more than 60 papers in JFR, ICRA, IROS and other authoritative journals and conferences. He has won the China Patent Excellence Award, the First prize of Science and Technology Progress of Liaoning Province, the first prize of Natural Science Academic Achievements of Liaoning Province, the second prize of Science and Technology Progress of State Grid, the China Electric Power Science and Technology Award, the Science and Technology Achievement Award of Earthquake Prevention and Disaster Reduction of China Earthquake Administration, etc.

Rounding up Strategy against UAVs with High Speed and Great Maneuver

Professor Mengyi Wang 王蒙一

**State Key Laboratory of Intelligent Manufacturing System Technology
Beijing Institute of Electronic System Engineering**

Abstract

With the fast development of technology, traditional single UAV impact is inapplicable to target with high speed and great maneuver. Multiple UAVs can solve this difficult problem by building rounding up space and impact targets from various directions. However, this is a complicated problem with multiple constraints and difficulties. First, we need to modeling the target in order to estimate its maneuver. Based on this, the rounding up space should be established. After that, the arranging impact region and impact angle for each UAV should be distributed. By considering these constraints, the original rounding up problem could be resolved into several single UAV impact problems with impact angle constraints. Based on above analysis, we propose a rounding up strategy for multiple UAVs against multiple targets. Considering the above constraints, we get various interesting simulation results, and finally achieved a successful impact.



Mengyi Wang received his B.E. degree in automation from Beihang University, and Ph.D. degree in control science and engineering.

He is the deputy Director of Beijing Institute of Electronic System Engineering currently, also a professor and a deputy Chief Engineer. He is the deputy Director of the State Key Laboratory of Intelligent Manufacturing System Technology. As the Executive Vice Chairman of the Special Committee on Swarm Intelligence and Cooperative Control of the Chinese Institute of Command and Control, he has been engaged in research on navigation, guidance and control of unmanned aerial vehicle, swarm intelligent collaborative control, and system design and simulation. He has undertaken a lot pre-research subjects for many key models and projects, and has more than 20 authorized patents and more than 10 papers.

Dr. Wang serves as a Vice Chairman of the Editorial Board of Modern Defence Technology. He has won the National Upward Good Youth and the Beijing May 4th Youth Medal.

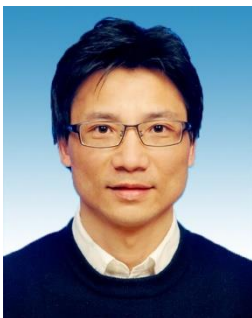
Intelligent Perception and Autonomous Control of Space Unmanned Systems

Professor Ligang Wu 吴立刚

Harbin Institute of Technology

Abstract

This talk is concerned with the capture of space moving target, which serves in many significant space on-orbit services including garbage clearance, space station maintenance and military attack, etc. The procedures to capture a moving target, especially a non-cooperative one, usually include perception, motion estimation and autonomous capturing. The perception of moving targets refers to using vision, radar and/or other techniques to obtain the basic information of the target and track its movement. The motion estimation is to resolve the pose and velocity of the moving target. The autonomous capturing aims at avoiding the rigid contact between the manipulator and the moving target. In recent years, the autonomous intelligent unmanned systems (AIUS) laboratory of Harbin Institute of Technology has carried out extensive and intensive research on the capture of space moving target. This talk covers front-edge topics such as fast corner extraction method for high precision perception and measurement, novel point cloud registration data fusion strategy for real-time motion estimation, advanced control schemes for task-space tracking and autonomous capturing, and discussions of these methods regarding their key problems and challenges in practical applications.



Ligang Wu (M'10-SM'12-F'20) received the B.S. degree in Automation from Harbin University of Science and Technology, China in 2001; the M.E. degree in Navigation Guidance and Control from Harbin Institute of Technology, China in 2003; the PhD degree in Control Theory and Control Engineering from Harbin Institute of Technology, China in 2006. He was a research associate at the University of Hong Kong, the City University of Hong Kong, and the Imperial College London. He is now a full professor at Harbin Institute of Technology. Prof. Wu serves/served as an Associate Editor for a number of journals, including IEEE Transactions on Automatic

Control, IEEE Transactions on Industrial Electronics, IEEE/ASME Transactions on Mechatronics. He has published 8 research monographs and more than 200 research papers in international referred journals. His current research interests include autonomous intelligent unmanned systems, discontinuous control systems, cyber-physical systems, intelligent systems and robot technology, machine vision and intelligent detection technology, and power electronic systems. Prof. Wu was named as the Distinguished Professor of Chang Jiang Scholar in 2017, and he was the winner of the National Science Fund for Distinguished Young Scholars in 2015. He received China Young Five Four Medal in 2016, and was named as the Highly Cited Researcher since 2015. He is a Fellow of the IEEE.

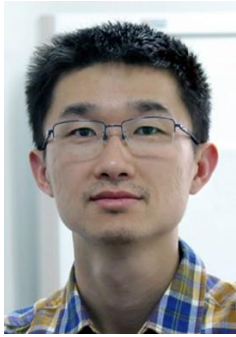
Fault Tolerant Game Control of Network Aircraft Systems

Professor Hao Yang 杨浩

Nanjing University of Aeronautics and Astronautics

Abstract

Safe decision and control is one of the most significant technologies that ensure stable and safe operations of flight control systems. Three different types of abnormal behaviors, namely physical faults, cyber attacks and malicious decision may take place respectively on the physical, cyber, individual decision and supervisory layers of the modern network aircraft systems. In this report, we summary the characteristic of each abnormal behavior, and points out the goals and difficulties in the safe decision and control of network aircraft systems. Then we introduce the basic problems and main ideas of fault tolerant game design based on the cross-layer adjustment, and present our latest works along this direction. Some prospectives are also provided.



Hao Yang received the B.Sc. degree in electrical automation from Nanjing Tech University, Nanjing, China, in 2004, and the Ph.D. degrees in automatic control from Université de Lille 1: Sciences et Technologies, Lille, France, and Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing, China, both in 2009. Since 2010, he has been working with College of Automation Engineering in NUAA, where he has been a Full Professor since 2015. He has published 2 books and over 90 international journal papers. His research interest includes control, optimization, game and fault tolerance of switched and network systems with their aerospace applications.

Dr. Yang was the recipient of the National Science Fund of China for Excellent Young Scholars in 2016, and the Top-Notch Young Talents of Central Organization Department of China in 2017. He has served as Associate Editor for Nonlinear Analysis: Hybrid Systems, Cyber-Physical Systems, Acta Automatica Sinica, and Chinese Journal of Aeronautics. He is also a member of the IFAC Technical Committee on Fault Detection, Supervision and Safety of Technical Processes.

Vision-Based Underwater Localization and Autonomous Control of Bionic Hitchhiking Robotic Fish

Professor Junzhi Yu 喻俊志

**College of Engineering,
Peking University, Beijing, China**

Abstract

The autonomous operation of the bionic robotic fish is a critical technique for practical ocean application, but the complex and unstructured underwater environment brings enormous challenges for localization and control. In this talk, we introduce an underwater visual localization method based on the artificial marker, which corrects the refraction effect and fuses the inertial information to improve precision. Then, aiming to an underwater autonomous hitch-hiking task of the bionic robotic fish, a multi-modal control strategy is presented, which completely relies on the onboard visual feedback. The obtained results pave the way for the intelligent and autonomous applications of bionic robotic fishes.



Junzhi Yu, Boya Distinguished Professor of Peking University, IEEE Fellow, Humboldt Research Fellowship (2009), “National Distinguished Young Scholars” Award from National Science Foundation of China (2017), and Ten Thousand Talents Program (2019). He has published more than 200 papers in international journals and conferences, including more than 100 papers in IEEE Transactions. Dr. Yu serves/served as associate editors of IEEE Transactions on Robotics, IEEE/ASME Transactions on Mechatronics, IEEE Transactions on Circuits and Systems II, Bioinspiration & Biomimetics, etc. His research interests include intelligent robots, mechatronics, and computational intelligence.

Novel Kalman Filtering Algorithms and Applications for Underwater Navigation

Professor Yonggang Zhang 张勇刚

College of Intelligent Systems Science and Engineering

Harbin Engineering University, Harbin, China

Abstract

Kalman filter has been widely used in integrated navigation since it can obtain the best state estimation performance under the condition that the noise is Gaussian distributed, the state space model is linear, and the statistical characteristics of the noise are known. However, in applications represented by underwater navigation, complex noise interference will bring the uncertainty and non-Gaussian of statistical characteristics of the noise, which will degrade the performance of traditional Kalman filter algorithm. The above problems are also important fundamental problems in the basic theory of optimal state estimation. Aiming at the above problems, this report introduces a novel adaptive Kalman filter with inaccurate process and measurement noise covariance matrices for applications with Gaussian noise, and robust student's t based Kalman filter algorithms for applications with outlier interference. Simulations and experiments of underwater navigation are performed to show the advantages of the proposed novel Kalman filtering algorithms.



Yonggang Zhang received his bachelor and master degree from Harbin Engineering University, China on 2002 and 2004 respectively. He obtained PhD degree from Cardiff University, UK on 2007. Currently he is a Professor of College of Intelligent Systems Science and Engineering, Harbin Engineering University. He is also the Director of Heilongjiang Engineering Laboratory of Navigation Instruments, deputy Director of Navigation Instrument Engineering Center of the Ministry of Education, and Member of Chinese Society of Inertial Technology. His main research areas include navigation technology and information fusion. He has published more than 170 academic papers. He was the recipient of the award of excellent doctoral

thesis supervisor from Chinese Association of Automation on 2019, First Prize of Natural Science Award of Chinese Association of Automation on 2021, and IEEE Barry Carlton Award on 2022.

Content List of 2022 International Conference on Guidance, Navigation and Control

Technical Program for Saturday, August 6, 2022

SatA1	3rd Floor Meeting Room 301
Robust Adaptive Control	3 层会议室 301
Chairs: Shuyi Shao	Nanjing Univ. of Aeronautics and Astronautics
Dawei Wu	Nanjing Univ. of Aeronautics and Astronautics
13:30-13:40	SatA1.1
224	<i>Accelerated iterative learning control for a class of discrete linear systems with uncertain dynamics</i>
Yunjun Chen	Tiangong Univ.
Likun Sun	Tiangong Univ.
Hui Xiong	Tiangong Univ.
Zhanshan Zhao	Tianjin Polytechnic Univ.
13:40-13:50	SatA1.2
278	<i>冗余漂浮空间机器人多任务轨迹规划</i>
Suping Zhao	Xi'an Technological Univ.
Chaobo Chen	Xi'an Technological Univ.
Kun Yan	Nanjing Univ. of Aeronautics and Astronautics
Xiaohua Song	Xi'an Technological Univ.
13:50-14:00	SatA1.3
315	<i>基于智能体的电力系统分布式自适应抗干扰控制</i>
Tongxin Shi	Nanchang Hangkong Univ.
Longsheng Chen	Nanchang Hangkong Univ.
Tongshuai Li	Nanchang Hangkong Univ.
Feiyu Jin	Nanchang Hangkong Univ.
14:00-14:10	SatA1.4
417	<i>基于无源性与人势场法的四旋翼避障与位置控制</i>
Yi Wang	Jiangsu Univ. of Science and Technology
Hui Ye	Jiangsu Univ. of Science and Technology
Xiaofei Yang	Jiangsu Univ. of Science and Technology
14:10-14:20	SatA1.5
432	<i>多源不确定强耦合下四旋翼无人机姿态鲁棒自适应控制</i>
Chenyang Liu	Hohai Univ.
Dawei Wu	Nanjing Univ. of Aeronautics and Astronautics
Yize Guo	Hohai Univ.
Xinsai Lv	Hohai Univ.
Jiani Zhou	Hohai Univ.
Shuyi Shao	Nanjing Univ. of Aeronautics and Astronautics
14:20-14:30	SatA1.6
463	<i>无人直升机姿态约束抗干扰飞行控制</i>
Yankai Li	Xi'an Univ. of Technology

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646	<i>Adaptive control of magnetic levitation system based on state observers</i>
Zhenwei Ma	Sun Yat-Sen Univ.
Linfeng Su	Sun Yat-Sen Univ.
Jinbo Wang	Sun Yat-Sen Univ.
Hongbo Chen	Sun Yat-Sen Univ.
14:40-14:50	SatA1.8
758	<i>Model free adaptive attitude control method for launch vehicles</i>
Shuo Wang	Beijing Aerospace Automatic Control Institute.
Cong Huang	Beijing Aerospace Automatic Control Institute.
Guanghui Wang	Beijing Aerospace Automatic Control Institute.
14:50-15:00	SatA1.9
935	<i>基于改进狼群算法的无人直升机航迹规划</i>
Liwen Wang	Nanjing Univ. of Aeronautics and Astronautics
Shuyi Shao	Nanjing Univ. of Aeronautics and Astronautics
Qingxian Wu	Nanjing Univ. of Aeronautics and Astronautics
Zengliang Han	Nanjing Univ. of Aeronautics and Astronautics
15:00-15:10	SatA1.10
1147	<i>Disturbance observer based fractional-order sliding mode control of permanent magnet synchronous motor</i>
Sijia Zheng	Nanjing Univ. of Aeronautics and Astronautics
Shuyi Shao	Nanjing Univ. of Aeronautics and Astronautics
Mou Chen	Nanjing Univ. of Aeronautics and Astronautics
15:10-15:20	SatA1.11
1163	<i>风干扰下倾转旋翼机直升机模态预设性能控制</i>
Ranlong Xia	Nanjing Univ. of Aeronautics and Astronautics
Shuyi Shao	Nanjing Univ. of Aeronautics and Astronautics
Qingxian Wu	Nanjing Univ. of Aeronautics and Astronautics
15:20-15:30	SatA1.12
1228	<i>具有多重随机干扰的 NSV 自适应鲁棒轨迹跟踪控制</i>
Xiaohui Yan	Hefei Univ.
Yuwei Yao	Hefei Univ.
Yuhua Wu	Hefei Univ.
Jiangxin Xu	Hefei Univ.

SatA2	3rd Floor Meeting Room 302			
Aviation Airborne Systems I	三层会议室 302			
Chairs: Shuyan Liu	AVIC. Qingan Group .,Co., Ltd.		RuoXuan Li	Beijing Institute of Technology
Weijuan Zheng	AVIC. Qingan Group .,Co., Ltd.		Shaoming He	Beijing Institute of Technology
13:30-13:40	SatA2.1		Tao Song	Beijing Institute of Technology
			Hong Tao	Beijing Institute of Technology
159 Velocity optimization of cargo door opening and closing process based on PVT algorithm			15:00-15:10	SatA2.10
Weijuan Zheng	AVIC. Qingan Group .,Co., Ltd.			
Hongjun Pang	AVIC. Qingan Group .,Co., Ltd.		1217 Characteristic analysis of torque monitoring and limiting technology of high-lift system	
Wenjing Zhi	AVIC. Qingan Group .,Co., Ltd.		Ning Kang	AVIC. Qingan Group .,Co., Ltd.
Dongping Liu	AVIC. Qingan Group .,Co., Ltd.		Tingting Wang	AVIC. Qingan Group .,Co., Ltd.
13:40-13:50	SatA2.2		Youmin Shi	AVIC. Qingan Group .,Co., Ltd.
166 Trajectory planning and trajectory tracking control method of unmanned airship			15:10-15:20	SatA2.11
Hongjun Pang	AVIC. Qingan Group .,Co., Ltd.			
Weijuan Zheng	AVIC. Qingan Group .,Co., Ltd.		1221 Modeling and simulation of control systems for brushless DC motor based on hall sensor	
Sa Liu	AVIC. Qingan Group .,Co., Ltd.		Jiaxuan Xie	AVIC. Qingan Group .,Co., Ltd.
13:50-14:00	SatA2.3		Shaomin Zhang	AVIC. Qingan Group .,Co., Ltd.
169 Research on design method of civil aircraft advanced door actuating system based on mbse			Zhiying Yao	AVIC. Qingan Group .,Co., Ltd.
Wenjing Zhi	AVIC. Qingan Group .,Co., Ltd.		15:20-15:30	SatA2.12
Anting Chen	AVIC. Qingan Group .,Co., Ltd.			
Weijuan Zheng	AVIC. Qingan Group .,Co., Ltd.		1275 基于神经网络的飞机液压伺服动作系统控制研究	
Dongping Liu	AVIC. Qingan Group .,Co., Ltd.		Minxiang Chen	AVIC. Qingan Group .,Co., Ltd.
14:00-14:10	SatA2.4		Yanyan Luo	AVIC. Qingan Group .,Co., Ltd.
209 Simulation analysis of an electric drive device based on matlab			Yajun Yu	AVIC. Qingan Group .,Co., Ltd.
Zhiying Yao	AVIC. Qingan Group .,Co., Ltd.		Bing Han	AVIC. Qingan Group .,Co., Ltd.
Jiaxuan Xie	AVIC. Qingan Group .,Co., Ltd.			
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373 Performance analysis of a mutual-excited oscillation linear hydraulic motor			GNC (Spacecraft) I	三层会议室 303
Xinglu Li	Beihang Univ.		Chairs: Chong Sun	Northwestern Polytechnical Univ.
Yang Li	Beihang Univ.		Yisi Liu	Yunnan Observatories, CAS.
Yuan Cao	Beihang Univ.		13:30-13:40	SatA3.1
Xiaoting Liu	Beihang Univ.			
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597 An adaptive lever-arm estimation method of airborne POS for airborne earth observation			Zhigang Chen	Jilin Univ.
Yihong Sun	Beihang Univ.		Lindong Fan	Chang Guang Satellite Technology Co., Ltd.
Xiaolin Gong	Beihang Univ.		Feng Li	Chang Guang Satellite Technology Co., Ltd.
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720 Chip scale atomic spin gyroscope based on MEMS			13:40-13:50	SatA3.2
Yao Chen	Xi'an Jiaotong Univ.			
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865 Influence of valve sealing structure on opening characteristics of aviation high voltage solenoid valve			Ting Song	Shanghai Institute of Spaceflight Control Technology
Kun Li	AVIC. Qingan Group .,Co., Ltd.		Xianliang Zhang	Shanghai Institute of Spaceflight Control Technology
Yongtao Luo	AVIC. Qingan Group .,Co., Ltd.		Lei Ning	Shanghai Institute of Spaceflight Control Technology
Tao Zhang	AVIC. Qingan Group .,Co., Ltd.		Xiao Pan	Shanghai Institute of Spaceflight Control Technology
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			Guopeng Wang	Shanghai Institute of Spaceflight Control Technology
			Hailei Wu	Shanghai Institute of Spaceflight Control Technology
			Shuqing Cao	Shanghai Institute of Spaceflight Control Technology

	Control Technology
Fei Han	Shanghai Institute of Spaceflight
	Control Technology
XinPeng Di	Shanghai Institute of Spaceflight
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841 地月空间航天器编队测角相对导航	
Hanqiong Liu	Nanjing Univ. of Aeronautics and Astronautics
Baichun Gong	Nanjing Univ. of Aeronautics and Astronautics
Ziwen Wang	Nanjing Univ. of Aeronautics and Astronautics
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879 Space-based observation approach for multiple GEO defunct satellites pose parameters determination	
Di Zhao	Northwestern Polytechnical Univ.
Lijun Zhang	China Xi'an Satellite Control Center
Chong Sun	Northwestern Polytechnical Univ.
YongQing Sun	Northwestern Polytechnical Univ.
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Wenliang Dong	China Xi'an Satellite Control Center
Yulei Tian	China Xi'an Satellite Control Center
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936 一种基于改进星棱锥的全自主主星图识别算法	
Lijun Zhang	China Xi'an Satellite Control Center
Xiaoyan Yang	China Xi'an Satellite Control Center
Yingying Qi	China Xi'an Satellite Control Center
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1035 New astrometry data of NEA (99942) apophis	
Yisi Liu	Yunnan Observatories, CAS.
Chong Sun	Northestern Polytechnical Univ.
Lijun Zhang	China Xi'an Satellite Control Center
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1166 基于强化学习的对地观测卫星任务规划方法	
Xiaogang Yu	Beijing Institute of Remote Sensing Information
Qian Zhao	Beijing Institute of Remote Sensing Information
Jiazhaoy Yin	Beijing Institute of Remote Sensing Information
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1167 基于视线测量的双星协同抵近控制方法研究	
Weilin Wang	National Univ. of Defense Technology
Hua Chai	National Univ. of Defense Technology
Peng Li	Space Engineering Univ.
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1258 A novel interacting multiple model based robust filter for integrated navigation system	
Menghao Qian	Nanjing Univ. of Science and Technology
Wei Chen	Northwestern Polytechnical Univ.
Xing Gao	China Shipbuilding Industry Group
Ruisheng Sun	Nanjing Univ. of Science and Technology
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1316 Three-dimensional cooperative guidance law with time-varying velocities	
Zhenan Shuai	Nanjing Univ. of Science and Technology
Rui Lv	China Academy of Launch Vehicle Technology
Wei Chen	Northwestern Polytechnical Univ.
Ruisheng Sun	Nanjing Univ. of Science and Technology
Yuan Li	Nanjing Univ. of Science and Technology
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Dengwei Song	Beihang Univ.
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218 ARINC 659 背板总线在余度计算机中的应用	
Yanguo Hu	AVIC Shenyang Aircraft Design and Research Institute
Yanming Fan	AVIC Shenyang Aircraft Design and Research Institute
Yifan Qi	AVIC Shenyang Aircraft Design and Research Institute
Haotian Yang	AVIC Shenyang Aircraft Design and Research Institute
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Zhigang Li	The Rocket Force Univ. of Engineering
Xiaoxia Han	The Second Artillery Engineering Univ.
Yapeng Li	Baoji Army Representative Office of Rocket Army Equipment Department
Jie Wang	The Rocket Force Univ. of Engineering
Zhijie Zhou	The Rocket Force Univ. of Engineering
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359 Fault diagnosis of aircraft navigation system based on machine learning	
Yongjie Mao	Southwest Jiaotong Univ.
Shijie Deng	Southwest Jiaotong Univ.
Dewang Chen	Southwest Jiaotong Univ.

Na Qin	Southwest Jiaotong Univ.
Deqing Huang	Southwest Jiaotong Univ.
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470 一种新的基于可解释性置信规则库的飞轮健康状态评估模型	
Xiaoyu Cheng	Harbin Normal Univ.
Peng Han	Harbin Normal Univ.
Wei He	Harbin Normal Univ.
Peng Zhang	Xi'an High Tech Research Institute
Xiaoxia Han	The Rocket Force Univ. of Engineering
Yingmei Li	Harbin Normal Univ.
You Cao	The Rocket Force Univ. of Engineering
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745 Fault diagnosis for flight control system based on contrastive learning	
An Zhou	Beihang Univ.
Yujie Cheng	Beihang Univ.
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785 基于联邦学习的锂电池寿命预测方法研究	
PeiYang Xu	Beihang Univ.
Jian Ma	Beihang Univ.
Shu Xu	Beihang Univ.
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811 A novel method for aircraft actuator fault diagnosis based on causal graph and T-S fuzzy model	
Yu Chen	Beihang Univ.
Laifa Tao	Beihang Univ.
Yue Li	Beijing Aerospace Automatic Control Research Institute
Qiang Wang	Shenyang aircraft Design&research institute
Mingliang Suo	Beihang Univ.
Zhengduo Zhao	Beihang Univ.
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834 基于时频域转换及雨流法的电子设备随机振动概率疲劳损伤预测	
Shengxing Wei	Beihang Univ.
Cheng Qian	Beihang Univ.
Yi Ren	Beihang Univ.
Jun Li	Beijing Institute of Control Engineering
Ning Zhang	Beijing Institute of Control Engineering
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882 A fault diagnosis method of feature graphical flight control system based on GAF-SWT	
Cong Zhang	Beihang Univ.
Qiang Wang	AVIC Shenyang Aircraft Design and Research Institute
Laifa Tao	Beihang Univ.

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1066 Reliability modeling of multistate systems based on Markov state transition	
Zeshun Li	Harbin Univ. of Science and Technology
Jia Qi	Harbin Univ. of Science and Technology
Zhen Zhou	Harbin Univ. of Science and Technology
Yongquan Sun	Harbin Univ. of Science and Technology
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1192 Fault diagnosis for aircraft aileron actuator based on graph regularization network	
Yujie Cheng	Beihang Univ.
Ruipeng Wu	Beihang Univ.
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1344 Optimized selection of inertial measurement unit by considering calibration information and long-term stability	
Xiaofei Ma	Beijing Institute of Control and Electronic Technology
Hailian Huang	Beijing Institute of Control and Electronic Technology
Jingyi Xing	Beihang Univ.
Ke Ma	Beihang Univ.
Mingliang Suo	Beihang Univ.
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Yongxi Lv	Northwestern Polytechnical Univ.
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Xingyu Wang	Northwestern Polytechnical Univ.
Zhen Yang	Northwestern Polytechnical Univ.
Xiaoyang Li	Northwestern Polytechnical Univ.
Haiyin Piao	Northwestern Polytechnical Univ.
Jichuan Huang	Northwestern Polytechnical Univ.
Deyun Zhou	Northwestern Polytechnical Univ.
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190 Empirical model of single dielectric barrier discharge plasma actuator for flow control	
Yunhao Fu	Northwestern Polytechnical Univ.
Yongxi Lv	Northwestern Polytechnical Univ.
Jingping Shi	Northwestern Polytechnical Univ.
Xiaobo Qu	Northwestern Polytechnical Univ.
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216 Coordinated standoff tracking of a moving target based on the lateral offset	
Shan Huang	Northwestern Polytechnical Univ.
Yongxi Lv	Northwestern Polytechnical Univ.

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Wantong Chen	Civil Aviation Univ. of China	Dandan Hu	Civil Aviation Univ. of China
Tianru Diao	Civil Aviation Univ. of China	Xingqi Zhao	Civil Aviation Univ. of China
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Yuyin Tian	Civil Aviation Univ. of China	Yongzhao Hua	Beihang Univ.
Tianru Diao	Civil Aviation Univ. of China	13:30-13:40	SatA7.1
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612 Gravitational field simulation based on point-array and standard model			
Boxi Yu	Wuhan Univ.	JiaLin Qi	Beihang Univ.
Di Huang	Wuhan Univ.	Zheng Zhang	Beihang Univ.
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614 Backstepping sliding model control for attitude tracking of multi-spacecraft on SO(3)			
Zhifu Wang	Wuhan Univ.	Yongzhao Hua	Beihang Univ.
Di Huang	Wuhan Univ.	Xiwang Dong	Beihang Univ.
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625 Lane change trajectory planning of intelligent vehicles based on polynomial and rolling horizon			
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642 Indoor high-precision 3D-SLAM algorithm incorporating planar element features			
Kunhui Feng	Civil Aviation Univ. of China	Shuguo Pan	Southeast Univ.
Qingji Gao	Civil Aviation Univ. of China	Qian Meng	Southeast Univ.
Xiaoli Wang	Civil Aviation Univ. of China	Min Zhang	Nari Group Corporation
Yuansong Jiang	Civil Aviation Univ. of China	Chun Ma	Southeast Univ.
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668 Research on airfield navigation lamps pollution imaging and its detection algorithm			
Wencai Zhang	Civil Aviation Univ. of China	Wang Gao	Southeast Univ.
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Xin Tian	Civil Aviation Univ. of China	610 Beidou B1C signal data and pilot pseudocode dual-channel joint acquisition algorithm	
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889 Wind vector inversion of ADS-B data based on improved PSO-PF algorithm			
Wantong Chen	Civil Aviation Univ. of China	Bin Lan	Shenyang Aerospace Univ.
Duo Wu	Civil Aviation Univ. of China	Wansen Shu	Shenyang Aerospace Univ.
Shiyu Ren	Civil Aviation Univ. of China	Zhi Wang	Civil Aviation Management Institute of China.
Tianru Diao	Civil Aviation Univ. of China	Song Xu	Shenyang Aerospace Univ.
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1335 Code recognition of aircraft engine fan blades based on improved LeNet-5			
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817 An optimization method for height aided GNSS vector tracking under signal challenging environments			
		Zongwei Huang	The 723rd Institute of CSIC
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818 Factor graph optimization based location estimation with sequential pseudo-ranges			
		Zongwei Huang	The 723rd Institute of CSIC
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938 Distributed time-varying optimization for a class of second-order multi-agent systems with disturbance			
		Piaoyi Su	Beihang Univ.
		Homgwei Zheng	Beijing Academy of Blockchain and Edge Computing

Jianglong Yu	Beihang Univ.
Yongzhao Hua	Beihang Univ.
Xiwang Dong	Beihang Univ.
Zhang Ren	Beihang Univ.
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947 <i>Weapon target assignment based on compensation auction algorithm</i>	
Xuheng Li	Beihang Univ.
Jianglong Yu	Beihang Univ.
Xiwang Dong	Beihang Univ.
Qingdong Li	Beihang Univ.
Yongzhao Hua	Beihang Univ.
Zhang Ren	Beihang Univ.
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958 <i>Formation optimization method of multiple hypersonic vehicles</i>	
Yuqing Zhang	Beihang Univ.
Jianglong Yu	Beihang Univ.
Xiwang Dong	Beihang Univ.
Qingdong Li	Beihang Univ.
Zhang Ren	Beihang Univ.
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1067 <i>UAV path planning from human demonstrations using inverse reinforcement learning</i>	
Zhiang Xu	Beihang Univ.
Yongzhao Hua	Beihang Univ.
Xiwang Dong	Beihang Univ.
Qingdong Li	Beihang Univ.
Zhang Ren	Beihang Univ.
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1171 <i>Approach guidance for rendezvous of non-cooperative targets based on onboard trajectory planning</i>	
Meiyi Huang	Beijing Institute of Technology
Zixuan Liang	Beijing Institute of Technology
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1200 <i>Relative pose estimation from range measurements for collaborative SLAM system</i>	
Yang Zhang	Beihang Univ.
Jianglong Yu	Beihang Univ.
Qingdong Li	Beihang Univ.
Xiwang Dong	Beihang Univ.
Zhang Ren	Beihang Univ.
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1205 <i>Event-triggered distributed multisensor multitarget tracking with GM-PHD filter</i>	
JiaLin Qi	Beihang Univ.
Zheng Zhang	Beihang Univ.
Jin Dong	Beijing Academy of Blockchain and Edge Computing
Hong Jiang	Beihang Univ.
Xiwang Dong	Beihang Univ.
Jianglong Yu	Beihang Univ.
Zhang Ren	Beihang Univ.
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Autonomous Control I		四层会议室 401
Chairs: Dapeng Zhou	AVIC Shenyang Aircraft Design and Research Institute	
Yan Li	Northwestern Polytechnical Univ.	
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100 <i>Aggressive collision avoidance and control method for quadrotor</i>		
Jiang Zhao	Beihang Univ.	
Chiyu Cao	Beihang Univ.	
Zhihao Cai	Beihang Univ.	
Yingxun Wang	Beihang Univ.	
13:40-13:50	SatA8.2	
258 <i>Aggressive quadrotor flight control through dynamic gates</i>		
Jiang Zhao	Beihang Univ.	
Han Liu	Beihang Univ.	
Yingxun Wang	Beihang Univ.	
Zhihao Cai	Beihang Univ.	
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319 <i>Time-varying sliding mode-based integrated guidance and control design</i>		
Ge Lan	Harbin Institute of technology	
Xinxin Wang	Harbin Institute of technology	
Hongqian Lu	Harbin Institute of technology	
Xianlin Huang	Harbin Institute of technology	
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816 <i>Research on autonomous landing method of flying vehicle based on deep learning</i>		
Xiulin Zhang	AVIC Shenyang Aircraft Design and Research Institute	
Chong Zhen	AVIC Shenyang Aircraft Design and Research Institute	
Xiaolei Qu	AVIC Shenyang Aircraft Design and Research Institute	
Yifeng Wang	Harbin institute of tecnology	
Yuangan Li	Beihang Univ.	
Jingcheng Zhang	Beihang Univ.	
Ke Li	Beihang Univ.	
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1041 <i>Research on integrated modeling and control method of air-breathing hypersonic vehicle</i>		
Jiaxin Li	Dalian Univ. of Technology.	
Dapeng Zhou	AVIC Shenyang Aircraft Design and Research Institute	
YongZhen Liu	AVIC Shenyang Aircraft Design and Research Institute	
Linfei Hou	Dalian Univ. of Technology	
Guoqiang Wu	Dalian Univ. of Technology	
14:20-14:30	SatA8.6	
1133 <i>Design of formation holding control for UAVs maneuver flight in formation based on virtual structure</i>		
Gang Ke	Northwestern Polytechnical Univ.	
Dapeng Zhou	AVIC Shenyang Aircraft Design and Research Institute	

Yuhang He	Northwestern Polytechnical Univ.
Yan Li	Northwestern Polytechnical Univ.
14:30-14:40	SatA8.7
1143 <i>Obstacle avoidance and trajectory tracking control of a quadrotor UAV under wind disturbance</i>	
Zhihao Cai	Beihang Univ.
Zeyu Hao	Beihang Univ.
Jiang Zhao	Beihang Univ.
Yingxun Wang	Beihang Univ.
14:40-14:50	SatA8.8
1145 <i>An online proportional guidance midcourse guidance method for near space targets based on air-breathing hypersonic platform</i>	
Jianquan Wang	Dalian Univ. of Technology
Long Wang	Harbin Institute of Technology
Jinwei Zhao	AVIC Shenyang Aircraft Design and Research Institute
Xinlu Guo	Dalian Univ. of Technology
Kai Liu	Dalian Univ. of Technology
14:50-15:00	SatA8.9
1152 <i>Comprehensive resilience evaluation method for UAV swarm based on multiple performance parameters</i>	
Zhan Zhang	Northwestern Polytechnical Univ.
Dapeng Zhou	AVIC Shenyang Aircraft Design and Research Institute
Ao Li	Northwestern Polytechnical Univ.
Yan Li	Northwestern Polytechnical Univ.
15:00-15:10	SatA8.10
1169 <i>面向自主学习飞行控制的硬件在环仿真研究</i>	
Fei Luo	Dalian Univ. of Technology
Ran Liu	AVIC Shenyang Aircraft Design and Research Institute
Yi Fang	AVIC Shenyang Aircraft Design and Research Institute
Zheng Hou	Dalian Univ. of Technology
kai liu	Dalian Univ. of Technology
15:10-15:20	SatA8.11
1194 <i>飞行器改进双通道模糊控制方法研究</i>	
Zeyu Jin	Dalian Univ. of Technology
Dapeng Yang	AVIC Shenyang Aircraft Design and Research Institute
Xiaoye Wang	AVIC Shenyang Aircraft Design and Research Institute
Zongjia Wang	Shanghai ShangShi Aviation Co., Ltd.
Kai Liu	Dalian Univ. of Technology
15:20-15:30	SatA8.12
1268 <i>复合式高速无人直升机飞行力学建模及操纵策略研究</i>	
Yang Yang	Yangzhou Collaborative Innovation Research Institute of Shenyang Aircraft Design and Research Institute Co. Ltd.
Weining Huang	AVIC Shenyang Aircraft Design and Research Institute
Yongwen Yang	Yangzhou Collaborative Innovation

	Research Institute of Shenyang Aircraft Design and Research Institute Co. Ltd.
Liang Xu	Yangzhou Collaborative Innovation Research Institute of Shenyang Aircraft Design and Research Institute Co. Ltd.
SatA9 4th Floor Meeting Room 406 Intelligent Navigation & Control I 四层会议室 406	
Chairs: Bo Zhu	Sun Yat-sen Univ.
Yuhua Qi	Sun Yat-sen Univ.
13:30-13:40	SatA9.1
122 <i>A robust obstacle detection and tracking method using geometric restrictions for monocular UAV</i>	
Wendi Zhan	Sun Yat-sen Univ.
Keqi Wei	McMaster Univ.
Yong Wang	Sun Yat-sen Univ.
Bo Zhu	Sun Yat-sen Univ.
Tianjiang Hu	National Univ. of Defense Technology
13:40-13:50	SatA9.2
431 <i>Indoor robot autonomous exploration method considering received signal strength of communication</i>	
Xvanang Li	Nanjing Univ. of Aeronautics and Astronautics
Jizhou Lai	Nanjing Univ. of Aeronautics and Astronautics
Pin Lv	Nanjing Univ. of Aeronautics and Astronautics
Wei Fang	Nanjing Univ. of Aeronautics and Astronautics
13:50-14:00	SatA9.3
578 <i>Targets-attackers-defender games with communication topology</i>	
Jianan Wang	Beijing Institute of Technology
Zeyu Wang	Beijing Institute of Technology
Guilu Li	Beijing Institute of Technology
Li Liang	Beijing Institute of Technology
Chunyan Wang	Beijing Institute of Technology
Jiayuan Shan	Beijing Institute of Technology
14:00-14:10	SatA9.4
608 <i>An improved asynchronous corner detector and corner event tracker for event cameras</i>	
Tong Wu	Harbin Institute of Technology
Zhan Li	Harbin Institute of Technology
Fulin Song	Harbin Institute of Technology
14:10-14:20	SatA9.5
687 <i>Robust coordinated longitudinal control of MAV based on energy state</i>	
Chenlong Zhang	Beihang Univ.
Dawei Li	Beihang Univ.
Haodong Li	Beihang Univ.
14:20-14:30	SatA9.6

765 <i>Multi-UAV cooperative hunting using PSO in 3D cluttered environment</i>		Aobo Wang	Tsinghua Univ.
Shichen Fan	Univ. of Toronto	Lei Guo	Beihang Univ.
Ge Song	Harbin Engineering Univ.	15:20-15:30	SatA9.12
Chih Chun Chen	Univ. of Toronto	1294 <i>Distributed average tracking for heterogeneous multiple UAV systems with actuator faults</i>	
Peng Shi	Univ. of Adelaide	Huiliao Yang	Hohai Univ.
Hugh Liu	Univ. of Toronto	Junyan Wang	Hohai Univ.
14:30-14:40	SatA9.7	Diqian Wang	Hohai Univ.
800 <i>Multimodal control of UAV based on gesture, eye movement and voice interaction</i>		Zhaoxiang Xiong	Hohai Univ.
Ao Zhou	Beijing Univ. of Posts and Telecommunications	Zhengze Li	Hohai Univ.
Lei Han	Beijing Univ. of Posts and Telecommunications	SatA10 4th Floor Meeting Room 407	
Yuzhen Meng	Beijing Univ. of Posts and Telecommunications	GNC (Missile) I 四层会议室 407	
14:40-14:50	SatA9.8	Chairs: Liangyu Zhao	Beijing Institute of Technology
1185 <i>A deep reinforcement learning approach for quadrotor path planning with search-based planner optimization</i>		Wei Wang	Beijing Institute of Technology
Xiaohui Chen	Sun Yat-Sen Univ.	13:30-13:40	SatA10.1
Yidong Chen	China Academy of Launch Vehicle Technology	435 <i>Finite-time converged cooperative homing guidance law for salvo attack</i>	
Li Liu	China Academy of Launch Vehicle Technology	Yuchen Wang	Beijing Institute of Technology
Hongbo Chen	Sun Yat-Sen Univ.	Jincheng Zhang	Beijing Institute of Technology
Yuhua Qi	Sun Yat-Sen Univ.	Wei Wang	Beijing Institute of Technology
14:50-15:00	SatA9.9	Xiaokang Wang	North Industries Group Finance Company LTD
1249 <i>A new method of distributed formation control for multi-agent systems based on game strategy</i>		Kuanrong Hu	North Industries Group Finance Company LTD
Yueyang Hua	China Academy of Launch Vehicle Technology	13:40-13:50	SatA10.2
Qiang Li	China Academy of Launch Vehicle Technology	499 <i>Input-constrained fuzzy adaptive control for hypersonic flight vehicles using system extension approach</i>	
Jun Ma	China Academy of Launch Vehicle Technology	Yajun Li	Xi'an Modern Control Technology Research Institute
Nuo Xu	China Academy of Launch Vehicle Technology	Jinping Li	Xi'an Modern Control Technology Research Institute
15:00-15:10	SatA9.10	Jiang Chang	Xi'an Modern Control Technology Research Institute
1259 <i>Model-based compensation for phase lag and residual measurement error induced by low-pass filtering in feedback control systems</i>		Gen Wang	Xi'an Modern Control Technology Research Institute
Yang Zhu	Southwest Jiaotong Univ.	Haochun Miao	Xi'an Modern Control Technology Research Institute
Linxi Xu	Univ. of Electronic Science and Technology of China	13:50-14:00	SatA10.3
Xinyu Zhang	Univ. of Electronic Science and Technology of China	589 <i>Composite robust roll autopilot design with ude observer</i>	
Fei Yan	Southwest Jiaotong Univ.	Jing Yang	Beijing Institute of Technology
15:10-15:20	SatA9.11	Yichen Cheng	Beijing Institute of Technology
1269 <i>A new integrated orientation method for UAV fused with polarization pattern and light intensity</i>		Wei Wang	Beijing Institute of Technology
Zhaobin Ye	Beihang Univ.	Baokui Geng	North Industries Group Finance Company LTD
Pengwei Hu	Beihang Univ.	Zhengyu Su	Beijing Institute of Technology
Jian Yang	Beihang Univ.	14:00-14:10	SatA10.4
		651A <i>review on navigation methods for high-speed aircraft</i>	
		Zhekun Cheng	Beijing Institute of Technology
		Liangyu Zhao	Beijing Institute of Technology
		14:10-14:20	SatA10.5
		821 <i>Self-tuning robust missile guidance law design</i>	
		Shih-Yao Lin	Beijing Institute of Technology

Jiaqi Liu	Beijing Institute of Technology	<i>underactuated hypersonic vehicle</i>	
Guang Zhang	Beijing Institute of Technology	Jiaqi Xu	Beijing Institute of Technology
Jiang Wang	Beijing Institute of Technology	15:20-15:30	SatA10.12
Hongbo Lei	Northwest Industries Group Company Ltd.	1254 <i>Glide guided bomb longitudinal controller design based on active disturbance rejection control</i>	
14:20-14:30	SatA10.6	Lingxue Zhao	Beijing Aerospace Feiteng Equipment Co.,Ltd.
961 <i>Output-feedback sliding mode control for multi-missile formation with collision avoidance</i>		Mingguang Wang	Beijing Aerospace Feiteng Equipment Co.,Ltd.
Qi Li	Xi'an Modern Control Technology Research Institute	Lixia Wei	Beijing Aerospace Feiteng Equipment Co.,Ltd.
Zhiqi Niu	Xi'an Modern Control Technology Research Institute	Guang Li	Beijing Aerospace Feiteng Equipment Co.,Ltd.
Shuo Song	Northwestern Polytechnical Univ.	SatA11 4th Floor Meeting Room 408	
Pei Pei	Beijing Institute of Technology	GNC (Hypersonic Vehicle) I 四层会议室 408	
14:30-14:40	SatA10.7	Chairs: Tao Chao	Harbin Institute of Technology
964 <i>Research on visual-inertial integrated navigation technology based on bomb-borne infrared/tv seeker</i>		Songyan Wang	Harbin Institute of Technology
Jian Meng	Beijing aerospace feiteng equipment technology co.,Ltd	13:30-13:40	SatA11.1
Junchao Li	Beijing aerospace feiteng equipment technology co.,Ltd	89 <i>A real-time trajectory planning algorithm for terminal area energy management</i>	
Shaochen Li	Beijing aerospace feiteng equipment technology co.,Ltd	Jiayang Zhou	Huazhong Univ. of Science and Technology
14:40-14:50	SatA10.8	Zongzhun Zheng	Beijing Aerospace Automatic Control Institute
1003 <i>Tracking differentiation guidance law based on backstepping control</i>		Kai Wang	Huazhong Univ. of Science and Technology
Jiaqi Liu	Beijing Institute of Technology	Yujie Wang	Huazhong Univ. of Science and Technology
Bailin Chen	Beijing Institute of Technology	Lei Liu	Huazhong Univ. of Science and Technology
Wenlong Yang	Beijing Institute of Technology	Huijin Fan	Huazhong Univ. of Science and Technology
Zhongjiao Shi	Beijing Institute of Technology	Bo Wang	Huazhong Univ. of Science and Technology
Wei Wang	Beijing Institute of Technology	Zhongtao Cheng	Huazhong Univ. of Science and Technology
14:50-15:00	SatA10.9	13:40-13:50	SatA11.2
1077 <i>Cooperative navigation and localization for infrared homing missiles</i>		114 <i>Attitude-tracking control based on robust adaptive dynamic programming for hypersonic vehicles</i>	
Keyong Li	Shanghai Academy of Spaceflight Technology	Yujie Wang	Huazhong Univ. of Science and Technology
Yanan Yu	Shanghai Institute of Spaceflight Control Technology	Zongzhun Zheng	Beijing Aerospace Automatic Control Institute
Jin Huang	Shanghai Electro-Mechanical Engineering Institute	Kai Wang	Huazhong Univ. of Science and Technology
Luhua Zhang	Shanghai Electro-Mechanical Engineering Institute	Jiayang Zhou	Huazhong Univ. of Science and Technology
15:00-15:10	SatA10.10	Bo Wang	Huazhong Univ. of Science and Technology
1126 <i>Three-dimensional sliding mode guidance law based on variable universe fuzzy control</i>		Zhongtao Cheng	Huazhong Univ. of Science and Technology
Zejun Zhu	Beijing Institute of Technology	Lei Liu	Huazhong Univ. of Science and Technology
Wei Wang	Beijing Institute of Technology		
Yi Ji	Beijing Institute of Technology		
Jian Zhang	Northwest Industries Group Company Ltd.		
Hongyan Zhang	Beijing Institute of Technology		
15:10-15:20	SatA10.11		
1161 <i>Active disturbance rejection attitude control of</i>			

13:50-14:00	SatA11.3	Xueye Chen	Harbin Institute of Technology
130 <i>Radau pseudospectral method-based cooperative re-entry trajectory optimization for hypersonic reentry vehicle</i>		Shenming Quan	Harbin Institute of Technology
Zequan Liu	Northwestern Polytechnical Univ.	Tao Chao	Harbin Institute of Technology
Jun Zhou	Northwestern Polytechnical Univ.	Songyan Wang	Harbin Institute of Technology
Zongyi Guo	Northwestern Polytechnical Univ.	15:00-15:10	SatA11.10
Jianguo Guo	Northwestern Polytechnical Univ.	1091 <i>基于多弹协同平台的空间配准算法</i>	
Guoqing Wang	CAS. Launch Vehicle Technology	Kan Zheng	Univ. of Electronic Science and Technology of China
14:00-14:10	SatA11.4	Jiaxin Yan	Univ. of Electronic Science and Technology of China
423 <i>Trajectory optimization for launch vehicle based on a hybrid approach</i>		Hongtao Gao	Univ. of Electronic Science and Technology of China
Fei Liu	Harbin Institute of Technology	Xin Luo	Univ. of Electronic Science and Technology of China
Tao Chao	Harbin Institute of Technology	Chen Fu	Huawei Tech Co., Ltd
Ming Yang	Harbin Institute of Technology	Zebo Zhou	Univ. of Electronic Science and Technology of China
Songyan Wang	Harbin Institute of Technology	15:10-15:20	SatA11.11
14:10-14:20	SatA11.5	1201 <i>Separability promotion algorithm based on KPCA plus LDA</i>	
925 <i>Reentry trajectory planning and tracking law of hyper-sonic glide vehicle under the influence of environmental uncertainty</i>		Ke Guo	Beijing Institute of Space Long March Vehicle
Mingyang Zhang	Harbin Institute of Technology	Xuguo Qin	Beijing Institute of Space Long March Vehicle
Zhishi Chen	Harbin Institute of Technology	Mengsi Fu	Beijing Institute of Space Long March Vehicle
Songyan Wang	Harbin Institute of Technology	15:20-15:30	SatA11.12
Tao Chao	Harbin Institute of Technology	1204 <i>An Improved directed acyclic graph SVM</i>	
Ming Yang	Harbin Institute of Technology	Ke Guo	Beijing Institute of Space Long March Vehicle
14:20-14:30	SatA11.6	Jiahong Song	Beijing Institute of Space Long March Vehicle
926 <i>Improved scheme of YOLOv3_Tiny based on UAV confrontation scenario</i>		Yudong Wang	Beijing Institute of Space Long March Vehicle
Shuai Song	Harbin Institute of Technology	SatA12	4th Floor Meeting Room 411
Shaoxing Guo	Harbin Institute of Technology	PNT Technology	四层会议室 411
Junxi Tian	Harbin Institute of Technology	Chairs: Guangen Gao	AVIC Xi'an Flight Automatic Control Research Institute
Tao Chao	Harbin Institute of Technology	Xianghao Hou	Northwestern Polytechnical Univ.
Ming Yang	Harbin Institute of Technology	13:30-13:40	SatA12.1
14:30-14:40	SatA11.7	124 <i>区域导航陆基无线电导航系统自动选台优化算法研究</i>	
1072 <i>Position biased terminal guidance based on geometric tangent</i>		Xufei Peng	AVIC Xi'an Flight Automatic Control Research Institute
Hongfen Chen	Harbin Institute of Technology	Peng Qin	Army Equipment Department Aviation Military Representative Bureau
Ke Guo	Beijing Institute of Space Long March Vehicle	Meng Zhang	Army Equipment Department Aviation Military Representative Bureau
Songyan Wang	Harbin Institute of Technology	13:40-13:50	SatA12.2
Tao Chao	Harbin Institute of Technology	252 <i>On the scalar-vector fusion loop for GNSS signal tracking</i>	
14:40-14:50	SatA11.8	Yiming Deng	AVIC Xi'an Flight Automatic Control Research Institute
1078 <i>An ADRC attitude control algorithm of quadrotor for wind interference</i>		Jun Luo	Army Equipment Department
Zhikai Hou	Harbin Institute of Technology		
Junxi Tian	Harbin Institute of Technology		
Jiandong Yang	Harbin Institute of Technology		
Songyan Wang	Harbin Institute of Technology		
Tao Chao	Harbin Institute of Technology		
14:50-15:00	SatA11.9		
1089 <i>大过载机动目标制导方案研究</i>			

Xiaoguang Zhou	Aviation Military Representative Bureau	Bin Xu	Northwestern Polytechnical Univ.
	Army Equipment Department	14:40-14:50	SatA12.8
	Aviation Military Representative Bureau	665 基于航迹规划的无人机地形辅助导航	
Qi Zhou	AVIC Xi'an Flight Automatic Control Research Institute	Wanrui Li	Northwestern Polytechnical Univ.
	AVIC Xi'an Flight Automatic Control Research Institute	Rui Zhang	Northwestern Polytechnical Univ.
Wei Li	AVIC Xi'an Flight Automatic Control Research Institute	Yong Xiao	Chengdu Aircraft Design and Research Institute
	AVIC Xi'an Flight Automatic Control Research Institute	Lin Yang	Chengdu Aircraft Design and Research Institute
13:50-14:00	SatA12.3	Bin Xu	Northwestern Polytechnical Univ.
283 地球物理场误差对超高精度惯性导航的影响分析		14:50-15:00	SatA12.9
Jinliang Zhang	Northwestern Polytechnical Univ.	685 ARAIM algorithm performance on UAV platforms in urban areas	
Jun Li	Army Equipment Department	Mengting Zhang	AVIC Xi'an Flight Automatic Control Research Institute
	Aviation Military Representative Bureau	Peng Qin	Army Equipment Department
Xiaokun Ding	AVIC Xi'an Flight Automatic Control Research Institute	Meng Zhang	Aviation Military Representative Bureau
Yang Shang	AVIC Xi'an Flight Automatic Control Research Institute		Army Equipment Department
14:00-14:10	SatA12.4	Aviation Military Representative Bureau	
284 低轨导航增强下的组合导航性能研究		Pu Chen	China National Aviation Corp Industry 618th Research Institute
Jin Chang	AVIC Xi'an Flight Automatic Control Research Institute	15:00-15:10	SatA12.10
Jun Luo	Army Equipment Department	742 An integrity monitoring algorithm based on multi-constellation/INS Integrated navigation for LPV-200	
	Aviation Military Representative Bureau	Shaohua Yang	Northwestern Polytechnical Univ.
Xiaoguang Zhou	Army Equipment Department	Xiaodong Zhang	AVIC Xi'an Flight Automatic Control Research Institute
	Aviation Military Representative Bureau	Nan Liu	AVIC Xi'an Flight Automatic Control Research Institute
14:10-14:20	SatA12.5	Zhenwei Li	Northwestern Polytechnical Univ.
329 一种光学陀螺随机误差在线实时补偿方法		Qixuan Sun	AVIC Xi'an Flight Automatic Control Research Institute
Kewen Lu	Beihang Univ.	15:10-15:20	SatA12.11
Xinlong Wang	Beihang Univ.	1237 空间桁架在轨装配机器人的运动规划方法	
Xiaokun Ding	AVIC Xi'an Flight Automatic Control Research Institute	Cong Liu	AVIC Xi'an Flight Automatic Control Research Institute
	AVIC Xi'an Flight Automatic Control Research Institute	Haifeng Li	The Fifth Military Representative office of Air Force Armament Division
Xiaodong Hu	AVIC Xi'an Flight Automatic Control Research Institute	Mingming Wang	Northwestern Polytechnical Univ.
14:20-14:30	SatA12.6	Jianjun Luo	Northwestern Polytechnical Univ.
330 高精度星光折射间接敏感地平定位大气折射模型研究		15:20-15:30	SatA12.12
Xianjun Zhan	Beihang Univ.	1282 Robust underwater direction-of-arrival tracking with uncertain measurement noise	
Xinlong Wang	Beihang Univ.	Boxuan Zhang	Northwestern Polytechnical Univ.
Xiaokun Ding	AVIC Xi'an Flight Automatic Control Research Institute	Guangen Gao	AVIC Xi'an Flight Automatic Control Research Institute
	AVIC Xi'an Flight Automatic Control Research Institute	Xiaokun Ding	AVIC Xi'an Flight Automatic Control Research Institute
Xiaodong Hu	AVIC Xi'an Flight Automatic Control Research Institute	Xianghao Hou	c
Qing Wei	AVIC Xi'an Flight Automatic Control Research Institute	SatA13	4th Floor Meeting Room 415
14:30-14:40	SatA12.7		
659 基于相对速度和位置辅助的无人机编队协同导航			
Pengjun Guo	Northwestern Polytechnical Univ.		
Rui Zhang	Northwestern Polytechnical Univ.		
Guangen Gao	AVIC Xi'an Flight Automatic Control Research Institute		

Automatic Landing Control		四层会议室 415		Yongyi Liu		AVIC Shenyang Aircraft Design and	
Chairs: Ran Liu		AVIC Shenyang Aircraft Design and Reasearch Institute		Hui Yu		AVIC Shenyang Aircraft Design and	
Lipeng Wang		Harbin Engineering Univ.				Research Institute	
13:30-13:40		SatA13.1		14:20-14:30		SatA13.6	
106 短距起飞垂直降落飞行器飞行品质研究				500 考虑执行器故障的舰载机综合决策系统研究			
Xudong Zhen		Nanjing Univ. of Aeronautics and Astronautics		Jingting Li		Fudan Univ.	
Zian Wang		Nanjing Univ. of Aeronautics and Astronautics		Man Zhang		AVIC Shenyang Aircraft Design and Research Institute	
Runchang Hu		Nanjing Univ. of Aeronautics and Astronautics		Li Zhang		Fudan Univ.	
Zheng Gong		Nanjing Univ. of Aeronautics and Astronautics		Zhenlin Xing		Fudan Univ.	
Yongliang Chen		Nanjing Univ. of Aeronautics and Astronautics		Jianliang Ai		Fudan Univ.	
Jiangfeng Wang		Nanjing Univ. of Aeronautics and Astronautics		14:30-14:40		SatA13.7	
13:40-13:50		SatA13.2		501 Order reduction control design for carrier-based aircraft automatic carrier landing system			
107 基于 L1 自适应推力矢量型 V/STOL 飞行器增稳控制				Yonghong Chen		Yangzhou Academy of Collaboration and Innovation Company Ltd.	
Runchang Hu		Nanjing Univ. of Aeronautics and Astronautics		Fengming Han		Beihang Univ.	
Zian Wang		Nanjing Univ. of Aeronautics and Astronautics		Chong Zhen		AVIC Shenyang Aircraft Design and Research Institute	
Yongliang Chen		Nanjing Univ. of Aeronautics and Astronautics		Xiulin Zhang		AVIC Shenyang Aircraft Design and Research Institute	
Dapeng Zhou		AVIC Shenyang Aircraft Design and Research Institute		Yuxiang Zhang		Yangzhou Academy of Collaboration and Innovation Company Ltd.	
Dapeng Yang		AVIC Shenyang Aircraft Design and Research Institute		Yufeng Mi		AVIC Shenyang Aircraft Design and Research Institute	
Zheng Gong		Nanjing Univ. of Aeronautics and Astronautics		14:40-14:50		SatA13.8	
13:50-14:00		SatA13.3		632 Design of longitudinal automatic carrier landing system based on reinforcement learning			
202 Lateral automatic landing control of carrier-based aircraft based on nonlinear dynamic inversion				Jinhan Wang		Beihang Univ.	
Lipeng Wang		Harbin Engineering Univ.		Haonan Tang		Beihang Univ.	
Donghui Yuan		Harbin Engineering Univ.		Hailiang Liu		Beihang Univ.	
Qidan Zhu		Harbin Engineering Univ.		Lixin Wang		Beihang Univ.	
Zixia Wen		Harbin Engineering Univ.		Dongqing Chen		AVIC Shenyang Aircraft Design and Research Institute	
14:00-14:10		SatA13.4		Yanhong Lu		AVIC Shenyang Aircraft Design and Research Institute	
208 An improved predictor-corrector guidance algorithm for reentry glide vehicle based on fast landing points position prediction				14:50-15:00		SatA13.9	
Chijun Zhou		Air Force Engineering Univ.		721 舰载无人机自主协同起降航线研究			
Mingjie Li		Air Force Engineering Univ.		Jingting Li		Fudan Univ.	
Lei Shao		Air Force Engineering Univ.		Zhenlin Xing		Fudan Univ.	
Humin Lei		Air Force Engineering Univ.		Lei Zhang		AVIC Shenyang Aircraft Design and Research Institute	
Changxin Luo		Air Force Engineering Univ.		Yiqun Dong		Fudan Univ.	
14:10-14:20		SatA13.5		Jianliang Ai		Fudan Univ.	
382 非相似四余度飞控计算机同步技术研究				15:00-15:10		SatA13.10	
Limeng Zhao		AVIC Shenyang Aircraft Design and Research Institute		858 Longitudinal automatic carrier landing with explicit nonlinear model predictive controller and improved pigeon inspired optimization			
Qi Zhang		AVIC Shenyang Aircraft Design and Research Institute		Zhibing Zhang		AVIC Shenyang Aircraft Design and Research Institute	
				Yang Yuan		Beihang Univ.	
				Chong Zhen		AVIC Shenyang Aircraft Design and	

Yimin Deng	Research Institute Beihang Univ.
Ziqiang Li	AVIC Shenyang Aircraft Design and Research Institute
15:10-15:20	SatA13.11
1018 Carrier-based fighter precision landing based on dynamic inversion and direct lift control	
Peijun He	Northwestern Polytechnical Univ.
Dapeng Yang	AVIC Shenyang Aircraft Design and Research Institute
Man Zhang	AVIC Shenyang Aircraft Design and Research Institute
Yan Li	Northwestern Polytechnical Univ.
15:20-15:30	SatA13.12
1039 Research on wave-off decision and elevator manipulation optimization of carrier-based UAV	
Li Zhang	Fudan Univ.
Liang Wang	Shanghai Institute of Astronautical Systems Engineering
Zhenlin Xing	Fudan Univ.
Jingting Li	Fudan Univ.
Jianliang Ai	Fudan Univ.
SatA14	4th Floor Meeting Room 418
AAR Technology	四层会议室 418
Chairs: Yaohong Qu	Northwestern Polytechnical Univ.
Dongli Yuan	National Univ. of Defense Technology
13:30-13:40	SatA14.1
566 Receiver stabilization during aerial refueling with dynamic surface control	
Zhongnan Xu	Nanjing Univ. of Aeronautics and Astronautics
Xuebing Li	Nanjing Univ. of Aeronautics and Astronautics
Zhuolin Xing	Nanjing Univ. of Aeronautics and Astronautics
Zunkun Cheng	Shanghai Institute of Spaceflight Control Technology
Zikang Su	Nanjing Univ. of Aeronautics and Astronautics
13:40-13:50	SatA14.2
750 Hybrid successive convex programming for spacecraft electromagnetic docking trajectory optimization	
Jinghui Zhang	Beijing Institute of Remote Sensing Information
Bin Yang	Beijing Institute of Remote Sensing Information
Guoqiang Zeng	Wuhan Univ.
Jinbo Wang	Sun Yat-Sen Univ.
Wei Teng	Beijing Institute of Remote Sensing Information
13:50-14:00	SatA14.3
966 Null-space-based collaborative guidance strategy for spacecraft rendezvous and docking with non-cooperative target	

Qi Li	Xi'an Modern Control Technology Research Institute
Shuo Song	Northwestern Polytechnical Univ.
Zhiqi Niu	Xi'an Modern Control Technology Research Institute
Xueping Wang	Xi'an Modern Control Technology Research Institute
14:00-14:10	SatA14.4
990 Fast aerial refueling cone tracking based on YOLOv5s	
Shuyao Zhang	AVIC First Aircraft Design and Research Institute
14:10-14:20	SatA14.5
1020 Anti-swing coordinated control of the UAV wing folding during the aerial recovery process	
Yiheng Liu	Beihang Univ.
Honglun Wang	Beihang Univ.
Yanxiang Wang	Beihang Univ.
Jiaxuan Fan	Beihang Univ.
14:20-14:30	SatA14.6
1025 Optimization of refueling hose release strategy by grey wolf optimizer	
Yanxiang Wang	Beihang Univ.
Honglun Wang	Beihang Univ.
Bin Ren	Beihang Univ.
Yiheng Liu	Beihang Univ.
14:30-14:40	SatA14.7
1060 Drogue recognition and tracking method based on YOLO + template matching algorithm	
Jia Wang	Northwestern Polytechnical Univ.
Dongli Yuan	Northwestern Polytechnical Univ.
Jiahe Shen	AVIC Xi'an Flight Automatic Control Research Institute
Dengyong Zuo	Northwestern Polytechnical Univ.
Ying Zhu	Northwestern Polytechnical Univ.
14:40-14:50	SatA14.8
1062 Trajectory control of PFC recovery under ADRC and improved LOS guidance law	
Lei Feng	Northwestern Polytechnical Univ.
Xiaojun Xing	Northwestern Polytechnical Univ.
Qianchao Gong	Northwestern Polytechnical Univ.
Yan Li	Northwestern Polytechnical Univ.
Yiming Guo	Northwestern Polytechnical Univ.
14:50-15:00	SatA14.9
1096 基于指令滤波反推—滑模的永磁同步电机控制	
Xiaomin Zhang	Chinese Flight Test Establishment
15:00-15:10	SatA14.10
1105 Accurate tracking control of autonomous aerial refueling receiver under complex wind field disturbances	
Wenbi Zhao	Northwestern Polytechnical Univ.
Yaohong Qu	Northwestern Polytechnical Univ.
15:10-15:20	SatA14.11
1123 无人自主加受油关键指标分析与评估	

Chairs: Yang Xu	Northwestern Polytechnical Univ.
Yuhang Kang	Naval Aeronautical and Astronautical Univ.
13:30-13:40	SatA16.1
93 <i>Precise formation control for the multi-agent systems based on tilted potential field with collision avoidance</i>	
Bojian Liu	Northwestern Polytechnical Univ.
Jun Fang	Northwestern Polytechnical Univ.
Yunxiao Qian	Northwestern Polytechnical Univ.
Aijun Li	Northwestern Polytechnical Univ.
13:40-13:50	SatA16.2
182 <i>基于模型预测控制-鸽群优化算法的无人飞行器集群编队重构控制</i>	
Jian Liao	Gannan Normal Univ.
Xiangyang Gao	CAS Shenzhen Institutes of Advanced Technology
Lei Wang	CAS Shenzhen Institutes of Advanced Technology
Yang Xu	Northwestern Polytechnical Univ.
Yuhang Kang	Naval Aeronautical and Astronautical Univ.
13:50-14:00	SatA16.3
201 <i>Autonomous obstacle avoidance algorithm for UAVs based on obstacle contour detection</i>	
Huanyu Li	Northwestern Polytechnical Univ.
Jindong Zhu	Northwestern Polytechnical Univ.
Yunfei Liu	AVIC Shenyang Aircraft Design and Research Institute
Xiaowei Fu	Northwestern Polytechnical Univ.
14:00-14:10	SatA16.4
328 <i>Distributed formation control of multi UAV with finite time convergence based on MPC</i>	
Qijie Chen	Naval Aviation Univ. Coastal Defense Academy
Yuqiang Jin	Naval Aviation Univ. Coastal Defense Academy
Zhicai Xiao	Naval Aviation Univ. Coastal Defense Academy
Tinglong Yan	Naval Aviation Univ. Coastal Defense Academy
14:10-14:20	SatA16.5
341 <i>An extensive application of model predictive control combined with policy search to multi-agent agile UAV flight</i>	
Huaxing Xu	Beijing Institute of Technology
Chengwei Yang	Beijing Institute of Technology
Juan Li	Beijing Institute of Technology
Chang Liu	Beijing Institute of Technology
Yu Yang	Beijing Institute of Technology
14:20-14:30	SatA16.6
363 <i>时域映射下的多无人机系统分布式优化二阶算法研究</i>	
Jiangyuan Tian	Air Force Engineering Univ.
Ruixuan Wei	Air Force Engineering Univ.

Chao Ding	Air Force Engineering Univ.
14:30-14:40	SatA16.7
387 <i>基于 MAXQ 分层学习的多目标无人机协同围捕方法研究</i>	
Feng Liu	Shijiazhuang Flying College of PLA
Ruixuan Wei	Air Force Engineering Univ.
Longting Jiang	Air Force Engineering Univ.
Jiangyuan Tian	Air Force Engineering Univ.
14:40-14:50	SatA16.8
427 <i>基于分布式 ϵ-纳什均衡的多智能体系统决策序列汇聚方法</i>	
Chao Ding	Air Force Engineering Univ.
Ruixuan Wei	Air Force Engineering Univ.
Qirui Zhang	Air Force Engineering Univ.
14:50-15:00	SatA16.9
502 <i>Air combat game based on behavior repetition</i>	
Haoran Zhang	Shanghai Jiaotong Univ.
15:00-15:10	SatA16.10
519 <i>A developmental anti-collision architecture for the brain-like event-related potential cycle in UAVs</i>	
Qirui Zhang	Air Force Engineering Univ.
Ruixuan Wei	Air Force Engineering Univ.
Weier Luo	Air Force Engineering University
Wenyuan Gu	Air Force Engineering University
Zhezong Wang	Unit 93525 of PLA
15:10-15:20	SatA16.11
876 <i>Three-dimensional super-twisting sliding mode guidance law with impact time and angle constraints</i>	
Jun You	Northwestern Polytechnical Univ.
Jin Zhang	Northwestern Polytechnical Univ.
Yuanjie Meng	Northwestern Polytechnical Univ.
Ke Zhang	Northwestern Polytechnical Univ.
Weidong Liang	Shanghai Electro-Mechanical Engineering Institute
Cheng Zhang	Xi'an Univ.ersity of Posts and Telecommunications
15:20-15:30	SatA16.12
1215 <i>一种改进象群算法的多无人机协同侦察任务决策研究</i>	
Xinrui Ren	Univ. of Shanghai for Science and Technology
SatA17 5th Floor Meeting Room 505	
GNC Education I 五层会议室 505	
Chairs: Li Fu	Beihang Univ.
Bo Yang	Beihang Univ.
13:30-13:40	SatA17.1
304 <i>融合科学与教育实践的高等工程教育创新模式 —— 基于俄罗斯鲍曼大学科学与教育中心的案例分析</i>	
Kai Shen	Beijing Institute of Technology
13:40-13:50	SatA17.2
611 <i>《智能机器人》开放实验课程的探索与研究</i>	
Ting Zhang	Beijing Institute of Technology
13:50-14:00	SatA17.3
671 <i>四旋翼无人机新工科人才培养的教学探索</i>	

Zhongjing Ma	Beijing Institute of Technology	233 3D object recognition of unmanned surface vessel based on grid-convolutional neural network	Linan Wan	Huazhong Univ. of Science and Technology
Bin Deng	Beijing Institute of Technology		Suoxia Miao	Nanchang Institute of Technology
Shengjie Guo	Beijing Institute of Technology		Housheng Su	Huazhong Univ. of Science and Technology
Liangliang Peng	Beijing Institute of Technology			
Suli Zou	Beijing Institute of Technology			
14:00-14:10	SatA17.4		13:30-15:30	SatA18.2
793 Research on the training strategy of UAV application professionals			410 基于深度学习的空管指令语义解析技术研究	
Mingqiu Ren	Airforce Early Warning Academy		Pengyu Liu	AVIC Xi'an Filght Automatic Control Research Institute
14:10-14:20	SatA17.5		Xueyao Zhu	AVIC Xi'an Filght Automatic Control Research Institute
917 科研创新能力培养为导向的研究生课程设计作业探索			13:30-15:30	SatA18.3
Bo Yang	Beihang Univ.		508 视觉惯性着陆组合引导方法设计与试验	
14:20-14:30	SatA17.6		Jing Ni	AVIC Chengdu Aircraft Design and Research Institute
1053 新工科背景下研究生核心课程思政建设初探			Bo Ma	AVIC Chengdu Aircraft Design and Research Institute
Bo Yang	Beihang Univ.		Zhaoxu Yang	AVIC Chengdu Aircraft Design and Research Institute
14:30-14:40	SatA17.7		Chenggang Tao	AVIC Chengdu Aircraft Design and Research Institute
1057 “电路”课程教学交互方法研究			Yan Zhou	AVIC Chengdu Aircraft Design and Research Institute
Bei Yan	Beihang Univ.		Yiwen Hu	AVIC Chengdu Aircraft Design and Research Institute
14:40-14:50	SatA17.8		13:30-15:30	SatA18.4
1135 新工科背景下研究生核心课学生创新能力培养的探索与实践			587 Distributed stochastic MPC for formation of multi-agent systems	
Bo Yang	Beihang Univ.		Mengting Lin	Sichuan Univ.
14:50-15:00	SatA17.9		Zhaoke Ning	Sichuan Univ.
1165 面向高校专业特色的课程思政教学探索—以航空航天类院校“检测技术与自动化”课程为例			Kai Zhang	Sichuan Univ.
Diyin Tang	Beihang Univ.		Bin Li	Sichuan Univ.
Bo Yang	Beihang Univ.		13:30-15:30	SatA18.5
15:00-15:10	SatA17.10		604 无人直升机火/飞综合控制技术研究	
1226 The application of synergetic control in nonlinear control systems on the example of airship flight control			Hang Dai	Nanjing Univ. of Aeronautics and Astronautics
Ning Tang	Bauman Moscow State Technical Univ.		Shouzhao Sheng	Nanjing Univ. of Aeronautics and Astronautics
Zeyu Wang	Beihang Univ.		Kang Wu	Nanjing Univ. of Aeronautics and Astronautics
Konstantin A. Neusypin	Bauman Moscow State Technical Univ.		Yuhua Ding	Nanjing Univ. of Aeronautics and Astronautics
Li Fu	Beihang Univ.		13:30-15:30	SatA18.6
Maria Selezneva	Bauman Moscow State Technical Univ.		1099 Performance analysis and design optimization of tubular linear oscillating machine with novel compound halbach array	
Lun Fei	Beijing System Design Institute of Electro-Mechanic Engineering		Pengjie Xiang	Beihang Univ.
15:10-15:20	SatA17.11		Liang Yan	Beihang Univ.
1301 无人机航路规划虚拟仿真实验教学平台设计与应用			Tianyi Wang	Beijing Institute of Automation Control Equipment
Donglai Li	Beihang Univ.		Lijia Ge	Beihang Univ.
Lingling Wang	Beihang Univ.		Chris Gerada	Univ. of Nottingham
15:20-15:30	SatA17.12			
1322 An innovative approach to teach geography based on the hanging unmanned aerial vehicle device				
Yue Yu	Autonomous Univ. of Madrid			
Wei Du	Experimental School of Beihang Univ.			
Lingling Wang	Beihang Univ.			
SatA18	4th Floor Aisle			
Poster Session 1	四层展厅			
13:30-15:30	SatA18.1			

Ahmed Aboelhassan	Arab Academy For Science, Technology and Maritime Transport	13:30-15:30	SatA18.15
333 <i>Performance analysis of kinematic-to-kinematic relative positioning based on GPS/BDS-3</i>			
Xiyu Fu	Nanjing Univ. of Aeronautics and Astronautics		
Yongrong Sun	Nanjing Univ. of Aeronautics and Astronautics		
Ling Wu	Nanjing Univ. of Aeronautics and Astronautics		
Kaifeng Wang	Nanjing Univ. of Aeronautics and Astronautics		
		13:30-15:30	SatA18.16
391 <i>3D lidar-based localization methods: an overview</i>			
Jiaqi Chen	China North Vehicle Research Institute		
Xijun Zhao	China North Vehicle Research Institute		
Zhibao Su	China North Vehicle Research Institute		
		13:30-15:30	SatA18.17
416 <i>基于维特比算法的室内地磁导航技术研究</i>			
Qiang Yu	Harbin Engineering Univ.		
Yicheng Gao	Harbin Engineering Univ.		
Dan Li	Harbin Engineering Univ.		
Libin Li	Harbin Engineering Univ.		
		13:30-15:30	SatA18.18
429 <i>Characteristic model and trajectory tracking compound control for coaxial twelve-rotor UAV</i>			
Cheng Peng	Changchun institute of optics, fine mechanics and physics, CAS		
Lihua Cai	Changchun institute of optics, fine mechanics and physics, CAS		
		13:30-15:30	SatA18.19
443 <i>Vacuum ratio of vibrating suction method: proposing, mathematical modeling, and experiment</i>			
Zhangyin Tong	Ningbo Institute of Technology, Beihang Univ.		
Liming Wang	Ningbo Institute of Technology, Beihang Univ.		
Junrui Shen	Ningbo Institute of Technology, Beihang Univ.		
Zhenzhen Zhang	Ningbo Institute of Technology, Beihang Univ.		
Peng Tan	Ningbo Institute of Technology, Beihang Univ.		
Hongbin Li	Ningbo Institute of Technology, Beihang Univ.		
		13:30-15:30	SatA18.20
471 <i>Agile turn guidance for air-to-air missile with linear Gauss pseudospectral method</i>			
Xiaopeng Gong	Beihang Univ.		
Qian Zhang	Beijing Institute of Astronautical Systems Engineering		
Hao Zhou	Beihang Univ.		
Wanchun Chen	Beihang Univ.		
Zhaohui Qi	The Institute of Effectiveness		

Evaluation of Flying Vehicle.		13:30-15:30	SatA18.21
513 Application of ZUPT for BDS/INS integrated navigation system with intelligent agricultural machinery			
Junyu Yang	Tongji Univ.		
Rui Guo	China Mobile Chengdu Institute of Research and Development		
Mengqi Xue	Tongji Univ.		
Xiaoxiao Lu	China Mobile Chengdu Institute of Research and Development		
Hongliang Yuan	Tongji Univ.		
13:30-15:30		SatA18.22	
558 Application of adaptive short time fourier transform in rocket telemetry data processing			
Meng Wei	Xi'an Satellite Control Center		
Bing Chen	The High School Affiliated to Xi'an Jiaotong Univ.		
Haoxue Li	Xi'an Satellite Control Center		
Dong Zhang	Xi'an Satellite Control Center		
13:30-15:30		SatA18.23	
627 A routing protocol for asymmetric links in UAV Ad Hoc network			
Rui Wang	Northwestern Polytechnical Univ.		
Xiwei Wu	Northwestern Polytechnical Univ.		
Hanyu Qian	Northwestern Polytechnical Univ.		
Bing Xiao	Harbin Institute of Technology		
13:30-15:30		SatA18.24	
630 多矢量姿态测量算法综述			
Yilin Liu	National Univ. of Defense Technology		
Meiping Wu	National Univ. of Defense Technology		
Yan Guo	National Univ. of Defense Technology		
Ruihang Yu	National Univ. of Defense Technology		
13:30-15:30		SatA18.25	
698 Optimal tuning of phase-lead compensator with gain and phase margins			
Yonghui Chen	Sichuan Univ. of Science and Engineering		
Chenmien Tan	Univ. of Nottingham Ningbo		
Jin Hou	Sichuan Univ. of Science and Engineering		
13:30-15:30		SatA18.26	
764 考虑多禁飞区规避的高速巡航飞行器轨迹优化方法			
Yanlun Zhang	National Univ. of Defense Technology		
Ruizhi He	National Univ. of Defense Technology		
Guojian Tang	National Univ. of Defense Technology		
Weimin Bao	National Univ. of Defense Technology		
13:30-15:30		SatA18.27	
808 多传感器融合的高旋修正弹姿解算系统研究			
Tingting Yin	Jinling Institute of Technology		
Zhong Yang	Jinling Institute of Technology		
Meng Zhai	East China Institute of Optoelectronic Integrated Device		
Youlong Wu	Jinling Institute of Technology		
13:30-15:30		SatA18.28	
824 A multi-velocity data processing method for a special measurement system			
Guo Li	Xi'an Satellite Control Center		
Si Shen	Xi'an Satellite Control Center		
Jiayu Chang	Xi'an Satellite Control Center		
Lei Shi	Xi'an Satellite Control Center		
13:30-15:30		SatA18.29	
844 Control parameter design for hypersonic vehicle via improved comprehensive learning pigeon-inspired optimization			
Hongcheng Xiang	Beihang Univ.		
Yimin Deng	Beihang Univ.		
13:30-15:30		SatA18.30	
875 基于加权融合的水下视觉 SLAM 图像增强算法			
Yueyang Ben	Harbin Engineering Univ.		
Rui Tang	Harbin Engineering Univ.		
Pingan Dai	Harbin Engineering Univ.		
Qian Li	Harbin Engineering Univ.		
13:30-15:30		SatA18.31	
883 基于深度学习的时间角度控制制导律			
Zichao Liu	Beijing Institute of Technology		
Jiang Wang	Beijing Institute of Technology		
Shaoming He	Beijing Institute of Technology		
13:30-15:30		SatA18.32	
930 基于模型的无人机信道编码算法设计与实现			
Yumeng Xue	Hengxiang Control Technology Co.,Ltd		
13:30-15:30		SatA18.33	
963 Intrusion detection for unmanned aerial systems: a survey			
Bin Di	Academy of Military Sciences		
Junling Gao	Tianjin Artificial Intelligence Innovation Center		
Wei Yi	Defense Innovation Institute		
Yixiao Zhu	Academy of Military Sciences		
Zhicheng Han	Tianjin Artificial Intelligence Innovation Center		
13:30-15:30		SatA18.34	
1090 Research on spiral sector decision-aided system based on neural network			
Fenfeng Wang	Chinese Flight Test Establishment		
Haiming Tian	Chinese Flight Test Establishment		
Wanyong Yuan	Northwestern Polytechnical Univ.		
Jiangfeng Jin	Chinese Flight Test Establishment		
13:30-15:30		SatA18.35	
1110 基于非线性高增益观测器的全驱动船舶轨迹跟踪反步控制			
Ning Kang	Harbin Univ. of Science and Technology		
Ling Huang	Harbin Univ. of Science and Technology		
13:30-15:30		SatA18.36	
1112 Software component design and application for telemetry data processing of launch vehicle			
Junxiao Bao	State Key Laboratory of Astronautic Dynamics		
Hao Dong	Xi'an Satellite Control Center		

Lupeng Song	Xi'an Satellite Control Center	Bin Liu	State Key Laboratory of Astronautic Dynamics
13:30-15:30	SatA18.37		
1127 Collision-free motion-primitive-based motion planning algorithm for fixed-wing robotic aircraft		Yanan Fang	State Key Laboratory of Astronautic Dynamics
Xinyi Zhao	Civil Aviation Univ. of China	Chong Wang	State Key Laboratory of Astronautic Dynamics
Hang Du	Civil Aviation Univ. of China		
Hanchen Lu	Beijing Electro-Mechanical Engineering Institute	Zhibin Zhang	State Key Laboratory of Astronautic Dynamics
13:30-15:30	SatA18.38	Jingyan Wang	State Key Laboratory of Astronautic Dynamics
1179 飞行校验中无线电导航信号场型重构方法		13:30-15:30	SatA18.45
Xinru Liu	Beihang Univ.	1347 水下 SINS/DVL 组合导航误差抑制综述	
Xiaofeng Shi	Beihang Univ.	Guanlin Zeng	National Univ. of Defense Technology
Hang Xiao	Beihang Univ.	Guohu Feng	National Univ. of Defense Technology
13:30-15:30	SatA18.39	13:30-15:30	SatA18.46
1227 Image enhancement and concealed object detection technology based on polarization vision		437 Distributed formation control and collision avoidance for heterogeneous UAV swarm	
Zhenhao Guo	National Univ. of Defense Technology	Pei Chi	Beihang Univ.
Xuesong Wu	National Univ. of Defense Technology	Xuan Zhang	Beihang Univ.
Chen Fan	National Univ. of Defense Technology	Kun Wu	Beihang Univ.
Xiaofeng He	National Univ. of Defense Technology	Lili Zheng	Beihang Univ.
Lilian Zhang	National Univ. of Defense Technology	Jiang Zhao	Beihang Univ.
Wenzhou Zhou	National Univ. of Defense Technology	Yingxun Wang	Beihang Univ.
Jing Huang	National Univ. of Defense Technology		
Xiaoping Hu	National Univ. of Defense Technology		
13:30-15:30	SatA18.40	SatA19 4th Floor Meeting Room 416	
1251 高升力系统“主-主”与“主-备”控制架构对比研究		Best Paper 四层会议室 416	
Guocai Li	Qing An Group Co., Ltd.	13:30-13:45	SatA19.1
Qian Tao	Qing An Group Co., Ltd.	120 基于 LMI 的输出跟踪自适应鲁棒无拖曳控制	
Yun Zhang	Qing An Group Co., Ltd.	Xiaoyun Sun	Shanghai Jiaotong Univ.
13:30-15:30	SatA18.41	Shufan Wu	Shanghai Jiaotong Univ.
1255 Targetless extrinsic calibration for LiDAR and camera based on multi-scale adaptive voxelization		Qiang Shen	Shanghai Jiaotong Univ.
Feng Yang	Northwestern Polytechnical Univ.	13:45-14:00	SatA19.2
Baibing Jie	Northwestern Polytechnical Univ.	546 基于零和微分博弈的航天器相对位置容错控制	
Hongxuan Song	Northwestern Polytechnical Univ.	Qingyuan Meng	Nanjing Univ. of Aeronautics and Astronautics
13:30-15:30	SatA18.42	Bin Jiang	Nanjing Univ. of Aeronautics and Astronautics
1286 Fabry-pérot interferometer-based raman mirror position measurement method for cold atom gravimeter		Yajie Ma	Nanjing Univ. of Aeronautics and Astronautics
Chao Liu	Harbin Institute of Technology	Hao Ren	Nanjing Univ. of Aeronautics and Astronautics
Ya Zhang	Harbin Institute of Technology	14:00-14:15	SatA19.3
Shiwei Fan	Harbin Institute of Technology	1083 基于轻量化固态激光雷达的稠密三维语义建图算法研究	
Yaqin Sun	Navy Submarine Academy	Fangyan Li	National Univ. of Defense Technology
Wei Gao	Harbin Institute of Technology	Changhao Chen	National Univ. of Defense Technology
13:30-15:30	SatA18.43	Xiaofeng He	National Univ. of Defense Technology
1304 优化特征空间随机森林海底底质分类方法		Chaoqun Chu	National Univ. of Defense Technology
Ting Zhao	Harbin Engineering Univ.	Wenzhou Zhou	National Univ. of Defense
Yuxin Zhao	Harbin Engineering Univ.		
Kexin Zhu	Harbin Engineering Univ.		
Xiong Deng	Harbin Engineering Univ.		
13:30-15:30	SatA18.44		
1340 Autonomous navigation based on dynamical substitutes in the Earth-Moon system under the full force model			

Technology		Yunbo Zhao	Univ. of Science and Technology
14:15-14:30	SatA19.4		of China
243 <i>Controllability analysis of the autopilot with angular-acceleration feedback</i>		Yang Cao	Univ. of Science and Technology
Yuhui Hu			of China
Bauman Moscow State		16:00-16:15	SatA19.11
Technical Univ.		230 <i>基于通用化等效模型的飞机系统辨识算法研究</i>	
Kai Shen	Beijing Institute of Technology	Dapeng Zhou	AVIC Shenyang Aircraft Design
Konstantin A. Neusypin	Bauman Moscow State		and Research Institute
	Technical Univ.	Heqi Li	AVIC Shenyang Aircraft Design
Jingyu Shi	Beijing Institute of Technology		and Research Institute
Jingzhong Zheng	Bauman Moscow State	Yeguang Wang	AVIC Shenyang Aircraft Design
	Technical Univ.		and Research Institute
14:30-14:45	SatA19.5	16:15-16:30	SatA19.12
287 <i>Design of fixed-time convergent sliding-mode guidance law with impact angle constraints</i>		266 <i>Consensus of cooperative-antagonistic networks with heterogeneous delays</i>	
Ke Zhang	Harbin Engineering Univ.	Yao Zou	Univ. of Science and Technology
Enjiao Zhao	Harbin Engineering Univ.		Beijing
Xue Shang	Harbin Engineering Univ.	Liangyin Zhong	Univ. of Science and Technology
Yuxin Zhao	Harbin Engineering Univ.		Beijing
14:45-15:00	SatA19.6	Wei He	Univ. of Science and Technology
303 <i>Predefined-time disturbance observer based predefined-time sliding mode control for space triangle tethered formation system</i>			Beijing
Bingxiao Huang	Northwestern Polytechnical Univ.	16:30-16:45	SatA19.13
Fan Zhang	Northwestern Polytechnical Univ.	1045 <i>Distributed fixed-time formation tracking control for multiple UAVs via nonsingular terminal sliding mode approach</i>	
Panfeng Huang	Northwestern Polytechnical Univ.	Weishun Sui	The Information Science
15:00-15:15	SatA19.7		Academy of China Electronics
490 <i>Distributed Event-Triggered Formation Control for a Multi-Robotic Fish System</i>			Technonlogy Group Corporation
Shijie Dai	CAS	Yi Yang	The Information Science
Zhengxing Wu	Institute of Automation, CAS		Academy of China Electronics
Min Tan	Institute of Automation, CAS		Technonlogy Group Corporation
Junzhi Yu	Peking Univ.	Wanmai Yuan	The Information Science
15:15-15:30	SatA19.8		Academy of China Electronics
547 <i>Evaluation of the control allocation methods for DEP-VTOL aircraft</i>			Technonlogy Group Corporation
Weijie Zheng	Sun Yet-Sen Univ.	Yueqian Liang	The Information Science
Zijie Qin	Sun Yet-Sen Univ.		Academy of China Electronics
Xi Zhao	Sun Yet-Sen Univ.	Guangxun Du	The Information Science
Bo Zhu	Sun Yet-Sen Univ.		Academy of China Electronics
Kun Liu	Sun Yet-Sen Univ.		Technonlogy Group Corporation
15:30-15:45	SatA19.9	Shangbin Zhang	The Information Science
863 <i>Robust optimal formation control of heterogeneous air-ground vehicles under communication faults via reinforcement learning</i>			Academy of China Electronics
Wanbing Zhao	Beihang Univ.eristy		Technonlogy Group Corporation
Hao Liu	Beihang Univ.eristy	16:45-17:00	SatA19.14
Qing Gao	Beihang Univ.eristy	1236 <i>Low-cost video super-resolution assisted by event signals</i>	
Jinhu Lv	Chinese Academy of Sciences	Yuqi Han	Tsinghua Univ.
15:45-16:00	SatA19.10	Jinli Suo	Tsinghua Univ.
1299 <i>Spectrally normalized adaptive neural identifier for dynamic modeling and trajectory tracking control of unmanned aerial vehicle</i>		Qionghai Dai	Tsinghua Univ.
Shaofeng Chen	Univ. of Science and Technology	SatB1 3rd Floor Meeting Room 301	
	of China	Fault Diagnosis 三层会议室 301	
Yu Kang	Univ. of Science and Technology	Chairs: Ke Zhang	Nanjing Univ. of Aeronautics
	of China		and Astronautics
		Ruiyun Qi	Nanjing Univ. of Aeronautics
			and Astronautics

15:50-16:00	SatB1.1	Runze Li	Nanjing Univ. of Aeronautics and Astronautics
128 <i>Fault diagnosis for variable pitch systems of wind turbine using multi-layer perceptron strategy</i>		Bin Jiang	Nanjing Univ. of Aeronautics and Astronautics
Tao Feng	DuChengWeiYe Group Co., Ltd		
Yishi Liu	Beihang Univ.	Ziquan Yu	Nanjing Univ. of Aeronautics and Astronautics
Qingdong Li	Beihang Univ.		
Zhang Ren	Beihang Univ.	Ningyun Lu	Nanjing Univ. of Aeronautics and Astronautics
16:00-16:10	SatB1.2		
242 <i>Adaptive lifting network with center loss for bearing fault diagnosis</i>		17:00-17:10	SatB1.8
Yang Li	Shanghai Univ.	794 <i>基于迁移学习的齿轮箱开放集跨工况故障诊断</i>	
Chun Liu	Shanghai Univ.	Xiang Ma	Beihang Univ.
Jing Zhao	Shanghai Microstate Engineering Center	Shu Xu	Beihang Univ.
Shaojie Li	Shanghai Univ.	Pengchao Shang	Beihang Univ.
16:10-16:20	SatB1.3	Jian Ma	Beihang Univ.
297 <i>Rocket telemetry data evaluation method based on data threshold envelopment analysis</i>		Ruzhi Zhou	Shanghai Institute of Satellite Engineering
Jianhai Zhang	State Key Laboratory of Astronautic Dynamics	17:10-17:20	SatB1.9
Lupeng Song	China Xi'an Satellite Control Center	866 <i>Fault tolerant control of PMSM with faulty low cost hall-effect sensors</i>	
Dong Zhang	China Xi'an Satellite Control Center	Zenghui Wang	Beihang Univ.
Weina Guo	China Xi'an Satellite Control Center	Haoan Wang	Beihang Univ.
Jia Wang	China Xi'an Satellite Control Center	Yuanlin Yan	Beihang Univ.
Shouhang Sun	State Key Laboratory of Astronautic Dynamics	Mohan Hao	Beihang Univ.
16:20-16:30	SatB1.4	Zhi Zhang	Beihang Univ.
349 <i>Distributed finite-time fault-tolerant control with command filtered backstepping for multiple fixed-wing UAVs</i>		17:20-17:30	SatB1.10
Fang Fang	Nanjing Univ. of Aeronautics and Astronautics	1094 <i>Distributed fault diagnosis for multi-agent systems against actuator and sensor faults</i>	
Ke Zhang	Nanjing Univ. of Aeronautics and Astronautics	Zhengyu Ye	Nanjing Univ. of Aeronautics and Astronautics
Wanglei Cheng	Nanjing Univ. of Aeronautics and Astronautics	Ziquan Yu	Nanjing Univ. of Aeronautics and Astronautics
Bin Jiang	Nanjing Univ. of Aeronautics and Astronautics	Yuehua Cheng	Nanjing Univ. of Aeronautics and Astronautics
16:30-16:40	SatB1.5	Bin Jiang	Nanjing Univ. of Aeronautics and Astronautics
408 <i>运载火箭振动数据的局部谱分析</i>		17:30-17:40	SatB1.11
Guilei Cui	State Key Laboratory of Astronautic Dynamics	1122 <i>Distributed consensus control for heterogeneous multi-agent systems under communication faults</i>	
Jianhai Zhang	State Key Laboratory of Astronautic Dynamics	Yingying Wang	Nanjing Univ. of Aeronautics and Astronautics
16:40-16:50	SatB1.6	Cheng He	Nanjing Univ. of Aeronautics and Astronautics
526 <i>Distributed fault-tolerant consensus control for linear multi-agent system with k-step hierarchical protocol</i>		Ruiyun Qi	Nanjing Univ. of Aeronautics and Astronautics
Yuanwen Wang	Northeastern Univ.	17:40-17:50	SatB1.12
Jiuxiang Dong	Northeastern Univ.	1230 <i>Distributed fault estimation for multi-agent systems subject to multiple time delays</i>	
16:50-17:00	SatB1.7	Shanwen Zhao	Nanjing Univ. of Aeronautics and Astronautics
606 <i>基于数据驱动的无人机集群故障检测与诊断</i>		Jing Zhu	Nanjing Univ. of Aeronautics and Astronautics
		SatB2 3rd Floor Meeting Room 302 Aviation Airborne Systems II 三层会议室 302	

Chairs: Shuyan Liu	Qing'an Group., Co., Ltd	967 伺服变排量液压马达性能仿真分析	Cimei Wang	Qing'an Group Co., Ltd
Hongjun Pang	Qing'an Group., Co., Ltd		Hongbo Wang	Qing'an Group Co., Ltd
15:50-16:00	SatB2.1		Ciyang Liu	Qing'an Group Co., Ltd
165 Design and analysis of redundant flight control system for large unmanned airship			17:20-17:30	SatB2.10
Hongjun Pang	Qing'an Group., Co., Ltd	1070 基于云边协同的齿轮箱故障诊断方法	Penghao Qi	Beihang Univ.
Sa Liu	Qing'an Group., Co., Ltd		Yiming Cao	Beihang Univ.
Weijuan Zheng	Qing'an Group., Co., Ltd		Hongke Dong	Beihang Univ.
16:00-16:10	SatB2.2		17:30-17:40	SatB2.11
207 Cooperative situation awareness of multi-UAVs based on multi-sensor information fusion		1233 液压驱动装置低速模式运转平稳性分析及试验研究	Haining Liang	Qing'an Group Co., Ltd
Zirui Liao	Beihang Univ.		Zhihua Tang	Qing'an Group Co., Ltd
Shaoping Wang	Beihang Univ.		Yuzhe Li	Qing'an Group Co., Ltd
Jian Shi	Beihang Univ.		17:40-17:50	SatB2.12
Zhenkun Li	Beihang Univ.	1248 阀控液压马达作动系统动态特性影响因素研究	Yanyan Luo	Qing'an Group Co., Ltd
Muhammad Baber	Beihang Univ.		Dongxu Wu	Qing'an Group Co., Ltd
Sial			Di Zhou	Qing'an Group Co., Ltd
16:10-16:20	SatB2.3		Xiaoyan Sheng	Qing'an Group Co., Ltd
295 A method based on VMD and power spectrum-CNN for bearing fault diagnosis			SatB3 3rd Floor Meeting Room 303 GNC (Spacecraft) II 三层会议室 303	
Zhuoyun He	Beijing Technology and Business Univ.		Chairs: Chong Sun	Northwestern Polytechnical Univ.
Xiaoyu Cui	Beijing Technology and Business Univ.		Xinyu Hou	Northwestern Polytechnical Univ.
Zhiyao Zhao	Beijing Technology and Business Univ.		15:50-16:00	SatB3.1
16:20-16:30	SatB2.4	187 一种基于扩展卡尔曼滤波的低轨非合作目标轨道确定方法	Lijun Zhang	China Xi'an Satellite Control Center
495 Switching LPV tracking controller design for longitudinal motion of aircraft with uncertain scheduling parameters			Wenliang Dong	China Xi'an Satellite Control Center
Yuwei Zhang	Beihang Univ.		Dan Liu	China Xi'an Satellite Control Center
Shaoping Wang	Beihang Univ.		Chenhui Ma	China Xi'an Satellite Control Center
Xingjian Wang	Beihang Univ.		16:00-16:10	SatB3.2
16:30-16:40	SatB2.5	206 Multistep iterative tracking filter for relative orbit determination in an arbitrarily orbit	Rucai Che	Beijing Institute of Control Engineering
496 基于相关性参数选择与卷积神经网络的飞行数据异常检测			Peng Zhang	China Academy of Space Technology
Jie Zhong	Sichuan Univ.		Bin Chen	Beijing Institute of Control Engineering
Chong Luo	Sichuan Univ.		16:10-16:20	SatB3.3
Heng Zhang	Sichuan Univ.	244 非太阳同步重访干涉轨道设计与摄动影响分析	Qi Chen	Spacety Co., Ltd.
Qiang Miao	Sichuan Univ.		Yimin Kou	Spacety Co., Ltd.
16:40-16:50	SatB2.6		Weijia Ren	Spacety Co., Ltd.
515 高升力系统故障监测与安全设计技术研究			Feng Yang	Spacety Co., Ltd.
Guangjiong Zhang	Qing'an Group Co., Ltd		Shujie Xiong	Spacety Co., Ltd.
16:50-17:00	SatB2.7		16:20-16:30	SatB3.4
516 串联非对称液压缸电液伺服作动系统速度特性研究		255 Dynamic scheduling method of satellites based on sliding		
Shuxiu Yu	Qing'an Group Co., Ltd			
Liqiang Teng	Qing'an Group Co., Ltd			
17:00-17:10	SatB2.8			
957 常闭高压电磁阀在通电状态下钢球的受力影响分析				
Chen Bai	Qing'an Group Co., Ltd			
Kun Jia	Qing'an Group Co., Ltd			
Shuai Liu	Qing'an Group Co., Ltd			
Nana Wang	Qing'an Group Co., Ltd			
17:10-17:20	SatB2.9			

<i>window and particle swarm optimization algorithm</i>		Hang Chen	Beihang Univ.
Wenxin Tian	Aerospace Information Research Institute, Chinese Academy of Sciences	Qinglei Hu	Beihang Univ.
		Huaining Wu	Beihang Univ.
		Chao Duan	Beihang Univ.
16:30-16:40	SatB3.5	Bin Chen	Beijing Institute of Control Engineering
339 <i>Calibration and application of space non-cooperative target relative measurement ground simulation system</i>		Peng Zhang	China Academy of Space Technology
Shuqing Cao	Shanghai Aerospace Control Technology Institute	17:20-17:30	SatB3.10
Yanping Sheng	Shanghai Aerospace Control Technology Institute	736 <i>Design and implementation of satellite digital simulation platform based on FMI</i>	
Guopeng Wang	Shanghai Aerospace Control Technology Institute	Huanhuan Chen	China Academy of Space Technology HangZhou Institute
Hailei Wu	Shanghai Aerospace Control Technology Institute	Peng Zhang	China Academy of Space Technology
Rui Zhou	Harbin Institute of Technology	Bin Chen	Beijing Institute of Control Engineering
16:40-16:50	SatB3.6	Ping Feng	Beijing Institute of Control Engineering
384 <i>Research on ghost-free hight dynamic range image fusion technology of space non-cooperative target</i>		Yong Wang	Beijing Institute of Control Engineering
Yanping Sheng	Shanghai Aerospace Control Technology Institute	Hao Liu	China Academy of Space Technology HangZhou Institute
Shuqing Cao	Shanghai Aerospace Control Technology Institute	17:30-17:40	SatB3.11
Jinzen Mu	Shanghai Aerospace Control Technology Institute	737 <i>Imaging scheduling of satellite constellation based on digital parallel system</i>	
Rui Zhou	Harbin Institute of Technology Univ.	Peng Zhang	China Academy of Space Technology
Yingying Qi	China Xi'an Satellite Control Center	Bin Chen	Beijing Institute of Control Engineering
16:50-17:00	SatB3.7	Ping Feng	Beijing Institute of Control Engineering
453 <i>空间大型桁架天线姿态与振动一体化控制</i>		Huanhuan Chen	China Academy of Space Technology HangZhou Institute
Xinyu Hou	Northwestern Polytechnical Univ.	Yong Wang	Beijing Institute of Control Engineering
Fan Zhang	Northwestern Polytechnical Univ.	17:40-17:50	SatB3.12
Panfeng Huang	Northwestern Polytechnical Univ.	965 <i>The application of digital satellites in the design and verification of on-board multi-satellite collaborative mission planning for earth observation</i>	
Xiaofei Ma	China Academy of Space Technology (Xi'an)	Ping Feng	Beijing Institute of Control Engineering
Jialong Zhu	China Academy of Space Technology (Xi'an)	Bin Chen	Beijing Institute of Control Engineering
Yang Li	China Academy of Space Technology (Xi'an)	Peng Zhang	China Academy of Space Technology
17:00-17:10	SatB3.8	Huanhuan Chen	China Academy of Space Technology HangZhou Institute
497 <i>基于热传导偏微分方程的集群迁移控制</i>		SatB4 3rd Floor Meeting Room 305	
Xiao Pan	Shanghai Institute of Spaceflight Control Technology	PHM Technology II 三层会议室 305	
Ting Song	Shanghai Institute of Spaceflight Control Technology		
Xianliang Zhang	Shanghai Institute of Spaceflight Control Technology		
Lei Ning	Shanghai Institute of Spaceflight Control Technology		
17:10-17:20	SatB3.9		
726 <i>Spacecraft integrated pose estimation with unknown noise covariances</i>			

Chairs: Yajie Ma	Nanjing Univ. of Aeronautics and Astronautics	Xue Liu	Beihang Univ.
Pin Lv	Nanjing Univ. of Aeronautics and Astronautics	Jian Ma	Beihang Univ.
15:50-16:00	SatB4.1	16:50-17:00	SatB4.7
338 Adaptive dynamic programming based attitude stabilization for a quadrotor UAV under actuator failures			
Hui Liu	Shanghai Maritime Univ.	Xue Liu	Beihang Univ.
Bo Li	Shanghai Maritime Univ.	Hongwei Han	Beijing Institute of Computing Technology
Shaoyu Yang	Shanghai Maritime Univ.	Jian Ma	Beihang Univ.
Haichao Zhang	Shanghai Maritime Univ.	Xinman Wu	Beihang Univ.
16:00-16:10	SatB4.2	Yan Zhang	Beihang Univ.
377 Distributed adaptive threshold based fault diagnosis for nonlinear multi-agent formation systems		17:00-17:10	SatB4.8
Jiantao Shi	Tsinghua Univ.	762 Design and realization of formation control for UAV-UGV system based on PX4	
16:10-16:20	SatB4.3	Weixuan Liu	Nanjing Univ. of Aeronautics and Astronautics
414 Adaptive high-order sliding mode based fault tolerant control of RLV		Xunhong Lv	Nanjing Univ. of Aeronautics and Astronautics
Zhiyu Li	Tianjin Univ.	Chenhui Wan	Nanjing Univ. of Aeronautics and Astronautics
Xiaojin Zhang	Tianjin Univ.	Zhiwei Wang	Nanjing Univ. of Aeronautics and Astronautics
Bailing Tian	Tianjin Univ.	Zehui Mao	Nanjing Univ. of Aeronautics and Astronautics
Qun Zong	Tianjin Univ.	17:10-17:20	SatB4.9
16:20-16:30	SatB4.4	769 筒状共轴折叠双旋翼无人直升机控制仿真与设计	
538 Fault detection technology and intelligent monitoring platform for substation unmanned monitoring system		Siling Wang	Xi'an Technological Univ.
Wenzhuo Li	China Electric Power Research Institute Co., Ltd	Yang Zhou	Xi'an Technological Univ.
Jinhu Zhang	China Electric Power Research Institute Co., Ltd	Chaobo Chen	Xi'an Technological Univ.
Xiaoping Liu	China Electric Power Research Institute Co., Ltd	Kun Yan	Nanjing Univ. of Aeronautics and Astronautics
Huapeng Wang	China Electric Power Research Institute Co., Ltd	Haipeng Ren	Xi'an Modern Control Technology Research Institute
Wei Zhang	China Electric Power Research Institute Co., Ltd	Sichen Ji	Xi'an Technological Univ.
Yalei Li	China Electric Power Research Institute Co., Ltd	17:20-17:30	SatB4.10
Ang Li	China Electric Power Research Institute Co., Ltd	924 Coordinated multi-robot exploration method based on GBPlanner in subterranean environments	
16:30-16:40	SatB4.5	Yinlei Bian	Nanjing Univ. of Aeronautics and Astronautics
579 Fault diagnosis of hydraulic systems with missing data based on FGCM: A data augmentation approach		Cheng Yuan	Nanjing Univ. of Aeronautics and Astronautics
Zhengduo Zhao	Beihang Univ.	Pin Lv	Nanjing Univ. of Aeronautics and Astronautics
Liang Ma	Beihang Univ.	Jizhou Lai	Nanjing Univ. of Aeronautics and Astronautics
Jia Liu	The Fifth Electronic Research Institute of Ministry of Industry and Information Technology	17:30-17:40	SatB4.11
Xuanyuan Su	Beihang Univ.	929 Actuator fault detection for hypersonic flight vehicle model: A sliding mode observer approach	
Laifa Tao	Beihang Univ.	Meijie Liu	Rocket Force Univ. of Engineering
16:40-16:50	SatB4.6	Changhua Hu	The Second Artillery Engineering Univ.
631 Health assessment and RUL prediction of aeroengine under multiple working conditions		Xiaoxiang Hu	Inertial Technology Research Center
Yan Zhang	Beihang Univ.		

Hongzeng Li	High-Tech Institute of Xi'an	Yunyan Wu	AVIC Xi'AN Flight Automatic
17:40-17:50	SatB4.12	16:40-16:50	Control Research Institute
1177 <i>A data-driven predictive maintenance method for quadrotor propulsion system based on LSTM network</i>		593 <i>基于增益自适应超螺旋滑模理论的无人机控制</i>	
Zongqi Li	Nanjing Univ. of Aeronautics and Astronautics	Qixian Zhou	Nanjing Univ. of Aeronautics & Astronautics
Fuyang Chen	Nanjing Univ. of Aeronautics and Astronautics	Yin Wang	Nanjing Univ. of Aeronautics & Astronautics
Zili Wang	Nanjing Univ. of Aeronautics and Astronautics	Xuean Sun	Nanjing Univ. of Aeronautics & Astronautics
SatB5 3rd Floor Meeting Room 306		16:50-17:00 SatB5.7	
GNC (Aircraft) II 三层会议室 306		779 <i>Longitudinal control of morphing aircraft based on fixed time constraint backstepping method</i>	
Chairs: Boyi Chen	Nanjing Univ. of Aeronautics and Astronautics	Ruichen Ming	Northwestern Polytechnical Univ.
Yin Wang	Nanjing Univ. of Aeronautics and Astronautics	Xiaoxiong Liu	Northwestern Polytechnical Univ.
15:50-16:00 SatB5.1		Yu Li	Northwestern Polytechnical Univ.
76 <i>UAV path planning based on improved GWO algorithm</i>		Wei Huang	Northwestern Polytechnical Univ.
Wei Jiang	Northwestern Polytechnical Univ.	Weiguo Zhang	Northwestern Polytechnical Univ.
Jingping Shi	Northwestern Polytechnical Univ.	17:00-17:10 SatB5.8	
Weiguo Zhang	Northwestern Polytechnical Univ.	1073 <i>多传感器位置反馈下的无人机动态目标跟踪研究</i>	
16:00-16:10 SatB5.2		Baorui Jiang	Chengdu Univ. of Information Technology
131 <i>Carrier-based aircraft landing based on deck motion prediction</i>		Dibo Xiao	Chengdu Univ. of Information Technology
Qi Zhu	Northwestern Polytechnical Univ.	Peng Liu	Chengdu Univ. of Information Technology
Jingping Shi	Northwestern Polytechnical Univ.	17:10-17:20 SatB5.9	
Shan Huang	Northwestern Polytechnical Univ.	1080 <i>Trajectory control of highly flexible aircraft based on discrete fuzzy robust H^∞ control</i>	
Chuanjian Lin	Northwestern Polytechnical Univ.	Liang Xu	Yangzhou Collaborative Innovation Research Institute of Shenyang Aircraft Design and Research Institute Co. Ltd
16:10-16:20 SatB5.3		Yongwen Yang	Yangzhou Collaborative Innovation Research Institute of Shenyang Aircraft Design and Research Institute Co. Ltd
314 <i>Research on real-time fault detection of UAV flight control system sensor based on riemannian manifold</i>		Weining Huang	Shenyang Aircraft Design and Research Institute
Chengzhi Chi	Chinese Aeronautical Establishment	Yang Yang	Yangzhou Collaborative Innovation Research Institute of Shenyang Aircraft Design and Research Institute Co. Ltd
Lei Su	Northwestern Polytechnical Univ.	17:20-17:30 SatB5.10	
Yongxi Lyu	Northwestern Polytechnical Univ.	1153 <i>基于模型预测控制的无人机姿态控制方法研究</i>	
Jingping Shi	Northwestern Polytechnical Univ.	Kexiang Duan	Nanjing Univ. of Aeronautics & Astronautics
Shan Huang	Northwestern Polytechnical Univ.	Yin Wang	Nanjing Univ. of Aeronautics & Astronautics
16:20-16:30 SatB5.4		Xiaoping Kong	Nanjing Univ. of Aeronautics & Astronautics
321 <i>Consistency formation maneuver control based on nonlinear dynamic inverse</i>		Xuean Sun	Nanjing Univ. of Aeronautics & Astronautics
Yunhui Wang	Shenyang Aircraft Design and Research Institute	16:30-16:40 SatB5.5	
Yunpeng Cai	Shenyang Aircraft Design and Research Institute	347 <i>Method of learning dynamic bayesian network parameter based on DEQPK algorithm</i>	
Yinghua Han	Shenyang Aircraft Design and Research Institute	Weinan Li	Northwestern Polytechnical Univ.
Jingping Shi	Northwestern Polytechnical Univ.	Jingping Shi	Northwestern Polytechnical Univ.
16:30-16:40 SatB5.5		Weiguo Zhang	Northwestern Polytechnical Univ.

17:30-17:40	SatB5.11	16:40-16:50	SatB6.6
1164 Robust formation control for quadrotors with obstacle avoidance and reconfiguration		845 Fully distributed multi-UAV cooperative hunting with external disturbance	
Danghui Yan	Northwestern Polytechnical Univ.	Xiang Yao	Beihang Univ.
Weiguo Zhang	Northwestern Polytechnical Univ.	Chaoyang Dong	Beihang Univ.
17:40-17:50	SatB5.12	Chengcai Wang	China Academy of Electronics and Information Technology
1173 Research on longitudinal control law design of thrust vector aircraft based on dynamic inverse		Maopeng Ran	Nanyang Technological Univ.
Hengyu Liu	AVIC Xi'AN Flight Automatic Control Research Institute	16:50-17:00	SatB6.7
Ning Zhang	AVIC Xi'AN Flight Automatic Control Research Institute	1082 Recognition of UAV image transmission signal via deep learning methods	
Xiaolong Chen	AVIC Xi'AN Flight Automatic Control Research Institute	Shunjie Zhang	National Univ. of Defense Technology
Yuelong Ma	AVIC Xi'AN Flight Automatic Control Research Institute	Wei Wang	National Univ. of Defense Technology
SatB6 3rd Floor Meeting Room 307 Intelligence Control II 三层会议室 307		Jun Zhang	National Univ. of Defense Technology
Chairs: Guochen Niu	Civil Aviation Univ. of China	17:00-17:10	SatB6.8
Yibo Tian	Civil Aviation Univ. of China	1088 Application of design strategy based on EA and fixed-point control allocation for flight controller design	
15:50-16:00	SatB6.1	Xiaoyu Qu	Shanghai Aircraft Design and Research Institute
186 B-spline fusion line of sight algorithm for UAV path planning		Hongxin Wang	Shanghai Aircraft Design and Research Institute
Wantong Chen	Civil Aviation Univ. of China	Peng Wu	Shanghai Aircraft Design and Research Institute
Qianqian Yang	Civil Aviation Univ. of China	17:10-17:20	SatB6.9
Tianru Diao	Civil Aviation Univ. of China	1219 基于分层空间一致性的旋转双目立体校正算法	
Shiyu Ren	Civil Aviation Flight Wide Area Surveillance and Safety Control Technology Key Laboratory	Qijun Luo	Civil Aviation Univ. of China
16:00-16:10	SatB6.2	Xin Tian	Civil Aviation Univ. of China
486 An adaptive sliding mode compound control method of interceptors		Qingji Gao	Civil Aviation Univ. of China
Jiafu Xiong	Beihang Univ.	17:20-17:30	SatB6.10
Junlong Li	Beijing Institute of Electronic System Engineering	1307 基于点云地图导航点的全局路径规划	
Rui Zhang	Beijing Institute of Electronic System Engineering	Guochen Niu	Civil Aviation Univ. of China
Chengcai Wang	China Academy of Electronics and Information Technology	Yu Xiong	Civil Aviation Univ. of China
Maopeng Ran	Nanyang Technological Univ.	Yibo Tian	Civil Aviation Univ. of China
16:10-16:20	SatB6.3	17:30-17:40	SatB6.11
596 基于遗传算法的无人机最优避撞路径研究		1311 基于毫米波雷达与激光雷达融合的障碍物检测与跟踪方法	
Shuguang Sun	Civil Aviation Univ. of China	Guochen Niu	Civil Aviation Univ. of China
Shan Dang	Civil Aviation Univ. of China	Yibo Tian	Civil Aviation Univ. of China
16:20-16:30	SatB6.4	Yu Xiong	Civil Aviation Univ. of China
629 多节链式倾转旋翼飞行器重构控制与运动仿真		17:40-17:50	SatB6.12
Xuqiao Wang	Civil Aviation Univ. of China	1319 基于交叉注意力融合的多任务交通场景检测模型	
Feilong Lai	Civil Aviation Univ. of China	Guochen Niu	Civil Aviation Univ. of China
Changli Zhao	Robotics Institute	Xiaonan Wang	Civil Aviation Univ. of China
16:30-16:40	SatB6.5	SatB7 3rd Floor Meeting Room 308 Intelligent Guidance & Control II 三层会议室 308	
718 基于改进 YOLOv5s 的面向自动驾驶场景的道路目标检测算法		Chairs: Jianglong Yu	Beihang Univ.
Dandan Hu	Civil Aviation Univ. of China	Yongzhao Hua	Beihang Univ.
Zhongting Zhang	Civil Aviation Univ. of China	15:50-16:00	SatB7.1
		344 The progress and intelligent control decision technical discussion on hypersonic morphing flight vehicle	

Yuan Zhang	Beijing Aerospace Automatic Control Institute	Bin Li	Sichuan Univ.
Wenyan Bai	Univ. of Chinese Academy of Sciences	17:00-17:10	SatB7.8
Wanwei Huang	Beijing Aerospace Automatic Control Institute	689 <i>SOM neural network based Gaussian Mixture PHD algorithm for multi-sensor multi-target tracking</i>	
Ying Nie	Beijing Aerospace Automatic Control Institute	Yujie Zhang	Beihang Univ.
Xu Huang	Beijing Aerospace Automatic Control Institute	Zheng Zhang	Beihang Univ.
16:00-16:10	SatB7.2	Jianglong Yu	Beihang Univ.
383 <i>Cooperative navigation method for small body landing of multiple landers</i>		Xiwang Dong	Beihang Univ.
Jiayi Chen	Beijing Institute of Technology	Zhang Ren	Beihang Univ.
Junwei Wang	Beijing Institute of Technology	Yongzhao Hua	Beihang Univ.
16:10-16:20	SatB7.3	17:10-17:20	SatB7.9
462 <i>Finite-time and fault-tolerant cooperative guidance against maneuvering target with time and angle constraints</i>		943 <i>Cooperative differential games guidance laws for multiple missiles against an active defense target with multiple defenders</i>	
Ang Huang	Beihang Univ.	Yangrui Kang	Beihang Univ.
Jianglong Yu	Beihang Univ.	Jianglong Yu	Beihang Univ.
Xiwang Dong	Beihang Univ.	Xiwang Dong	Beihang Univ.
Qingdong Li	Beihang Univ.	Zhang Ren	Beihang Univ.
Zhang Ren	Beihang Univ.	17:20-17:30	SatB7.10
16:20-16:30	SatB7.4	1244 <i>Underwater noncooperative target localization and tracking using range-only measurements</i>	
524 <i>A multi-satellite swarm pursuit-evasion game based on contract network protocol and optimal lambert method</i>		Yang Yang	Shanghai Jiao Tong Univ.
Yuelong Luo	Sichuan Univ.	Yichen Li	Shanghai Jiao Tong Univ.
Xiuqiang Jiang	Sichuan Univ.	Wenbin Yu	Shanghai Jiao Tong Univ.
16:30-16:40	SatB7.5	17:30-17:40	SatB7.11
532 <i>Diving guidance for hypersonic vehicles with terminal velocity constraint</i>		1250 <i>Sun time-sequence-based underwater autonomous positioning to eliminate positioning ambiguity</i>	
Yuhuan Ran	Beijing Institute of Technology	Pengwei Hu	Beihang Univ.
Meiyi Huang	Beijing Institute of Technology	Jian Yang	Beihang Univ.
Zixuan Liang	Beijing Institute of Technology	Qian Zhao	Beihang Univ.
16:40-16:50	SatB7.6	Lei Guo	Beihang Univ.
565 <i>Reinforcement learning control for hypersonic morphing flight vehicle with identification of dynamic parameter</i>		17:40-17:50	SatB7.12
Ying Nie	Beijing Aerospace Automatic Control Institute	1253 <i>Weighting strategy of multi-camera system for pose measurement</i>	
Yuan Zhang	Beijing Aerospace Automatic Control Institute	Yuran Li	Shanghai Jiao Tong Univ.
Wenyan Bai	Univ. of Chinese Academy of Sciences	Tongyuehao Zhou	Shanghai Jiao Tong Univ.
Yuteng Cao	Beijing Aerospace Automatic Control Institute	Wenbin Yu	Shanghai Jiao Tong Univ.
Chunmei Yu	Beijing Aerospace Automatic Control Institute	Yichen Li	Shanghai Jiao Tong Univ.
16:50-17:00	SatB7.7	SatB8 4th Floor Meeting Room 401 Autonomous Control II 四层会议室 401	
588 <i>Cooperative strike of multi-missiles based on distributed model predictive control</i>		Chairs: Lili Zheng	Beihang Univ.
Yadong Chen	Liaoning Shihua Univ.	Ke Li	Beihang Univ.
Zhaoke Ning	Sichuan Univ.	15:50-16:00	SatB8.1
Kai Zhang	Sichuan Univ.	154 <i>Virtual structure and artificial potential field-based cooperative control for UAV formation</i>	
		Zhihao Cai	Beihang Univ.
		Yumin Liu	Beihang Univ.
		Jiang Zhao	Beihang Univ.
		Yingxun Wang	Beihang Univ.
		16:00-16:10	SatB8.2
		438 <i>An evaluation model of UAV autonomous capability based on cloud model and AHP</i>	
		Pei Chi	Beihang Univ.

Le An	Beihang Univ.	Yibo Li	Yangzhou Collaborative Innovation
Lili Zheng	Beihang Univ.		Research Institute of Shenyang
Kun Wu	Beihang Univ.		Aircraft Design and Research
Jiang Zhao	Beihang Univ.		Institute Co. Ltd
Yingxun Wang	Beihang Univ.	Liang Xu	Yangzhou Collaborative Innovation
16:10-16:20	SatB8.3		Research Institute of Shenyang
459 <i>An event-based angle measurement method</i>			Aircraft Design and Research
Yingxun Wang	Beihang Univ.		Institute Co. Ltd
Shilong Ji	Beihang Univ.	Yongwen Yang	Yangzhou Collaborative Innovation
Zhihao Cai	Beihang Univ.		Research Institute of Shenyang
Jiang Zhao	Beihang Univ.		Aircraft Design and Research
16:20-16:30	SatB8.4		Institute Co. Ltd
815 <i>Research on prediction method of UAV heat seeking navigation control based on GRU networks</i>		Weining Huang	Shenyang Aircraft Design and
Yuangan Li	Beihang Univ.		Research Institute
Ke Li	Beihang Univ.	Rui Cao	Nanjing Univ. of Aeronautics &
16:30-16:40	SatB8.5		Astronautics
945 <i>Curriculum-RL based air combat decision-making</i>		17:20-17:30	SatB8.10
Yuhang He	Northwestern Polytechnical Univ.	1134 <i>Wind estimation of a quadrotor unmanned aerial vehicle</i>	
Dapeng Yang	AVIC Shenyang Aircraft Design	Xiaomei Cheng	Beihang Univ.
	and Research Institute	Yingxun Wang	Beihang Univ.
Man Zhang	AVIC Shenyang Aircraft Design	Zhihao Cai	Beihang Univ.
	and Research Institute	Ningjun Liu	Beihang Univ.
Yan Li	Northwestern Polytechnical Univ.	Jiang Zhao	Beihang Univ.
16:40-16:50	SatB8.6	17:30-17:40	SatB8.11
1016 <i>Ballistic missile midcourse intelligent maneuver strategy based on PPO algorithm</i>		1138 <i>Event camera visualization</i>	
Mengda Yan	Air Force Engineering Univ.	Bo Shao	Beihang Univ.
Rennong Yang	Air Force Engineering Univ.	Yingxun Wang	Beihang Univ.
Ying Zhang	Air Force Engineering Univ.	Zhihao Cai	Beihang Univ.
Xiaoru Zhao	Air Force Engineering Univ.	Jiang Zhao	Beihang Univ.
Longfei Yue	Air Force Engineering Univ.	17:40-17:50	SatB8.12
16:50-17:00	SatB8.7	1150 <i>大迎角下基于卡尔曼滤波的迎角侧滑角估计算法研究与实现</i>	
1021 <i>Real-time dense visual odometry for RGB-D cameras</i>		Shuangfei Fu	Shenyang Aircraft Design and
Baozhen Nie	Beihang Univ.		Research Institute
Yingxun Wang	Beihang Univ.	Qi Zhang	Shenyang Aircraft Design and
Jiang Zhao	Beihang Univ.		Research Institute
Zhihao Cai	Beihang Univ.	Yongyi Liu	Shenyang Aircraft Design and
Chiyu Cao	Beihang Univ.		Research Institute
17:00-17:10	SatB8.8	Bing Yao	Shenyang Aircraft Design and
1069 <i>Longitudinal control of morphing aircraft based on fixed time constraint backstepping method</i>			Research Institute
Honglin Liu	Dalian Univ. of Technology	Ting Wang	Shenyang Aircraft Design and
Rui Wang	Dalian Univ. of Technology		Research Institute
Chenxi Ma	AVIC Shenyang Aircraft Design		
	and Research Institute	SatB9	4th Floor Meeting Room 406
Weiguang Shao	Dalian Univ. of Technology	Intelligent Navigation & Control II	四层会议室 406
Kai Liu	Dalian Univ. of Technology	Chairs: Kai Shen	Beihang Univ.
17:10-17:20	SatB8.9	Xuan Xiao	Beijing Institute of Technology
1086 <i>Feasibility analysis of hypersonic vehicles trajectory under multiple constraints</i>		15:50-16:00	SatB9.1
		117 <i>A new threshold-free RAIM based on monte carlo sampling</i>	
		Cheng Liu	Beijing Institute of Tracking and
			Telecommunication Technology
		Fang Li	Eyestar Technology Co., Ltd
		Hengyong Xiang	Univ. of Chinese Academy of
			Sciences

Xiaolong Qian	Guilin Univ. of Electronic Technology	Technology
Xiaotong Wang	Eyestar Technology Co., Ltd	16:50-17:00
Yunfei Wang	Eyestar Technology Co., Ltd	SatB9.7
Qiang Sun	Eyestar Technology Co., Ltd	674 <i>An integrated navigation algorithm based on LSTM neural network</i>
16:00-16:10	SatB9.2	Yu Cao
291 <i>Particle filter method based on angle of arrival for seeking radioactive source</i>		Nanjing Univ. of Science and Technology
Yuehui Xie	Southwest Univ. of Science and Technology	Hongyang Bai
Mingbo Teng	Southwest Univ. of Science and Technology	Nanjing Univ. of Science and Technology
Pengcheng Wan	Southwest Univ. of Science and Technology	Huaju Liang
Yufeng Xiao	Southwest Univ. of Science and Technology	Nanjing Univ. of Science and Technology
16:10-16:20	SatB9.3	Guanyu Zou
312 <i>Relative positioning method of air-ground collaborative robot</i>		17:00-17:10
Xiao Li	Southwest Univ. of Science and Technology	SatB9.8
Hua Zhang	Southwest Univ. of Science and Technology	713 <i>Recent advances in mobile robot localization in complex scenarios</i>
Liubin Wang	Southwest Univ. of Science and Technology	Haojie Zhang
Jianwen Huo	Bauman Moscow State Technical Univ.	Hohai Univ.
16:20-16:30	SatB9.4	Xiaobin Xu
318 <i>Attitude control of spherical robot based on reinforcement learning</i>		Hohai Univ.
Xiaolu Li	Southwest Univ. of Science and Technology	Cong Liu
Haojie Lu	Southwest Univ. of Science and Technology	Hohai Univ.
Xiaoying Liang	Southwest Univ. of Science and Technology	Wen Wang
Liubin Wang	Southwest Univ. of Science and Technology	Yingying Ran
16:30-16:40	SatB9.5	Hohai Univ.
394 <i>Hierarchical control method for multi-robot formation</i>		Zhiying Tan
Jiamin Fan	Southwest Univ. of Science and Technology	17:10-17:20
Jianwen Huo	Bauman Moscow State Technical Univ.	SatB9.9
Ying Luo	Southwest Univ. of Science and Technology	849 <i>Research on pedestrian heading estimation based on multiple carrying position constraints of smartphones</i>
Yufeng Xiao	Southwest Univ. of Science and Technology	Haodong Li
16:40-16:50	SatB9.6	Beijing Institute of Technology
530 <i>Research on cross-media control of amphibious multi-rotor vehicle based on sliding mode control technology</i>		Zhihong Deng
Jun Sun	Southwest Univ. of Science and Technology	Beijing Institute of Technology
Liubin Wang	Southwest Univ. of Science and Technology	Xuan Xiao
Tong Wu	Southwest Univ. of Science and Technology	Beijing Institute of Technology
		Zhidong Meng
		Beijing Institute of Technology
		Ping Zhang
		Beijing Institute of Technology
		17:20-17:30
		SatB9.10
		862 <i>Research on torpedo SINS / trajectory integrated navigation method considering gravity disturbance</i>
		Zicong Wang
		Beijing Institute of Technology
		Zhihong Deng
		Beijing Institute of Technology
		17:30-17:40
		SatB9.11
		1120 <i>Deep learning based visual-inertial odometry with external attention mechanism</i>
		Zheming Tu
		National Univ. of Defense Technology
		Changhao Chen
		National Univ. of Defense Technology
		Xianfei Pan
		National Univ. of Defense Technology
		Zongyang Chen
		National Univ. of Defense Technology
		Chaoqun Chu
		National Univ. of Defense Technology
		17:40-17:50
		SatB9.12
		1260 <i>Robust integrated navigation filtering method based on unknown input estimator</i>
		Zihe Mao
		Harbin Institute of Technology
		Guochang Zhang
		Harbin Institute of Technology
		Ya Zhang
		Harbin Institute of Technology

Qiang Hao	China Ship Research and Development Academy	16:40-16:50	SatB10.6
Fei Yu	Harbin Institute of Technology	708 变质心共轴双旋翼无人机建模与反步滑模控制	
SatB10	4th Floor Meeting Room 407	Sichen Ji	Xi'an Technological Univ.
GNC (Missile) II	四层会议室 407	Siling Wang	Xi'an Technological Univ.
Chairs: Jingliang Sun	Nanjing Univ. of Aeronautics and Astronautics	Kun Yan	Nanjing Univ. of Aeronautics and Astronautics
Guangtong Xu	Tsinghua Univ.	Haipeng Ren	Xi'an Modern Control Technology Research Institute
15:50-16:00	SatB10.1	Yang Zhou	Xi'an Technological Univ.
82 Full-scale attitude solution based on dual euler method		16:50-17:00	SatB10.7
Mingcun Zhao	Central South Univ.	820 基于粒子群优化的直接力/气动力复合控制系统控制分配	
Wenhui Bao	Beijing Aerospace Technology Institute	Xuehu Ma	Beihang Univ.
Jing Dong	Central South Univ.	Junlong Li	Beijing Institute of Electronic System Engineering
Ang Su	National Univ. of Defense Technology	Zhaolei Wang	Beijing Aerospace Automatic Control Institute
Songlai Han	Central South Univ.	Maopeng Ran	Nanyang Technological Univ.
Xiaohui Lu	People's Liberation Army 91039th Unit	17:00-17:10	SatB10.8
Jiaying Gao	Jiujiang Zhongchuan Instrument Co.,Ltd(441 Factory)	847 基于快速终端误差动力学碰撞角/飞行时间约束制导律设计	
16:00-16:10	SatB10.2	Xuesheng Qin	National Univ. of Defense Technology
142 Implementation method of parallel approaching guidance based on adaptive dynamic surface control accounting for autopilot lag		Yuanhe Liu	National Univ. of Defense Technology
Qi Wang	China Airborne Missile Academy	Kebo Li	National Univ. of Defense Technology
Zhizhong Liao	China Airborne Missile Academy	Yangang Liang	National Univ. of Defense Technology
16:10-16:20	SatB10.3	17:10-17:20	SatB10.9
334 基于改进 PSO 的智能弹群任务分配算法		885 基于 DQN 的旋翼无人机着陆控制算法	
Yunchong Zhu	National Univ. of Defense Technology	Jin Tang	National Univ. of Defense Technology
Yangang Liang	National Univ. of Defense Technology	Yangang Liang	National Univ. of Defense Technology
Kebo Li	National Univ. of Defense Technology	Zhihui Bai	National Univ. of Defense Technology
Yuanhe Liu	National Univ. of Defense Technology	Kebo Li	National Univ. of Defense Technology
16:20-16:30	SatB10.4	17:20-17:30	SatB10.10
695 基于终端滑模的打击时间与打击角度约束制导律		977 Design of virtual-real cooperative flight Testbed for multiple unmanned aerial vehicles	
Wenxin Hao	Harbin Institute of Technology	Yangjie Wang	Beijing Institute of Technology
Pengyu Wang	Harbin Institute of Technology	Guangtong Xu	Tsinghua Univ.
Dongfang Zhu	Shanghai Institute of Spaceflight Control Technology	Yu Hu	Beijing Institute of Astronautical Systems Engineering
Chuanjiang Li	Harbin Institute of Technology	Teng Long	Beijing Institute of Technology
Xiao Han	Harbin Institute of Technology	Jingliang Sun	Nanjing Univ. of Aeronautics and Astronautics
16:30-16:40	SatB10.5	Junzhi Li	Beijing Institute of Technology
696 Dynamic MPC obstacle avoidance based tube sparse A* path planning method for UAV swarm under communication delays		17:30-17:40	SatB10.11
Chengen Li	Beijing institute of technology	1029 Hierarchical trajectory planning for multi-UAVs via sparse A* search and linear programming	
Teng Long	Beijing institute of technology	Guangtong Xu	Tsinghua Univ.
Jingliang Sun	Nanjing Univ. of Aeronautics and Astronautics		
Junzhi Li	Beijing institute of technology		
Yangjie Wang	Beijing institute of technology		

Yangjie Wang	Beijing Institute of Technology	Tong An	People's Liberation Army Air Force
Xuan Zhang	The First Academy of China		Early Warning Academy
	Aerospace Science and	Zhongrui Yuan	People's Liberation Army Air Force
	Technology Corporation		Early Warning Academy
Jingliang Sun	Nanjing Univ. of Aeronautics and	Yali Liu	People's Liberation Army Air Force
	Astronautics		Early Warning Academy
Teng Long	Beijing Institute of Technology	Wenzhe Wang	People's Liberation Army Air Force
17:40-17:50	SatB10.12		Early Warning Academy
1064 基于微分对策的非仿射导弹学习滑模制导			
Yuxin Gao	Nanjing Univ. of Aeronautics and	Yulong Pan	People's Liberation Army Air Force
	Astronautics		Early Warning Academy
Chunsheng Liu	Nanjing Univ. of Aeronautics and	Haishan Chen	People's Liberation Army Air Force
	Astronautics		Early Warning Academy
SatB11		16:30-16:40	SatB11.5
4th Floor Meeting Room 408		238 Fault-compensation based position control of vectored-propeller airship	
GNC (Hypersonic Vehicle) II		Li Chen	Shanghai Univ. of Engineering
Chairs: Yanbin Liu	Nanjing Univ. of Aeronautics		Science
	and Astronautics	Dong Qi	Mudanjiang Medical Univ.
Yanli Du	Nanjing Univ. of Aeronautics	16:40-16:50	SatB11.6
	and Astronautics	518 考虑未知扰动的RLV再入鲁棒容错姿态控制	
15:50-16:00	SatB11.1	Wu Liu	Xi'an Institute of Flight Automatic
162 高超声速飞行器LPV一体化式控制律设计			
Shu Yang	Northwestern Polytechnical Univ.		Control
Yunxiao Qian	Northwestern Polytechnical Univ.	Yunyan Wu	Xi'an Institute of Flight Automatic
			Control
Ting Yang	Northwestern Polytechnical Univ.	Wei Liu	Xi'an Institute of Flight Automatic
			Control
16:00-16:10	SatB11.2	Mingming Tian	Xi'an Institute of Flight Automatic
225 基于FADS/IMU信息融合的大气数据测量方法研究			
Dibo Xiao	Chengdu Univ. of Information		Control
	Technology	Tianpeng Huang	Xi'an Institute of Flight Automatic
Baorui Jiang	Chengdu Univ. of Information		Control
	Technology	16:50-17:00	SatB11.7
Peng Liu	Chengdu Univ. of Information	581 基于高速飞行器火力控制模型的智能解算方法	
	Technology	Ben Yang	Nanjing Univ. of Aeronautics and
16:10-16:20	SatB11.3		Astronautics
232 A target assignment method for cooperative engagement of multimissile based on improved biogeography-based optimization algorithm			
Kai Wang	Huazhong Univ. of Science and	Feiteng Jin	Nanjing Univ. of Aeronautics and
	Technology		Astronautics
Zongzhun Zheng	Beijing Aerospace Automatic	Yanbin Liu	Nanjing Univ. of Aeronautics and
	Control Institute		Astronautics
Yujie Wang	Huazhong Univ. of Science and	Boyi Chen	Nanjing Univ. of Aeronautics and
	Technology		Astronautics
Jiayang Zhou	Huazhong Univ. of Science and	Shouyong Peng	Beijing Aerospace Technology
	Technology		Institute
Zhongtao Cheng	Huazhong Univ. of Science and	17:00-17:10	SatB11.8
	Technology	688 Test and verification method of FADS algorithm for reusable aircraft	
Bo Wang	Huazhong Univ. of Science and	Shengman Hu	Beijing Aerospace Automatic
	Technology		Control Institute
Lei Liu	Huazhong Univ. of Science and	Qi Qi	Beijing Aerospace Automatic
	Technology		Control Institute
16:20-16:30	SatB11.4	Luyang Liang	Beijing Aerospace Automatic
235 A guidance and control scheme based on NDO for flexible hypersonic vehicle			
			Control Institute
		Tao Guo	Beijing Aerospace Automatic
			Control Institute

Dingjie Wang	National Univ. of Defense Technology
Hongbo Zhang	National Univ. of Defense Technology
Guojian Tang	National Univ. of Defense Technology
17:30-17:40	SatB12.11
1137 捷联惯导系统全状态量现场标定方法	
Rui Zhang	Harbin Engineering Univ.
Yueyang Ben	Harbin Engineering Univ.
Liqiang Liu	Harbin Engineering Univ.
Kun Wang	Harbin Engineering Univ.
Liang Hou	Harbin Engineering Univ.
Tian Qiu	Harbin Engineering Univ.
17:40-17:50	SatB12.12
1207 Inertial navigation/mileage parameter calibration method based on nonlinear optimization	
Zhiqian Zhao	Xi'an High Tech Research Institute
Zhili Zhang	Xi'an High Tech Research Institute
Zhaofa Zhou	Xi'an High Tech Research Institute
Zeqian Xu	Xi'an High Tech Research Institute
SatB13	4th Floor Meeting Room 415
Civil Aircraft	四层会议室 415
Chairs: Kezhi Zhang	Shanghai Aircraft Design & Research Institute
Jingyi Fu	Shanghai Aircraft Design & Research Institute
15:50-16:00	SatB13.1
149 The safety requirements capture, validation and verification for flight control system of civil aircraft	
Zhishuai Tang	Shanghai Aircraft Design & Research Institute
Di Fang	Shanghai Aircraft Design & Research Institute
Lingling Hu	Shanghai Aircraft Design & Research Institute
16:00-16:10	SatB13.2
150 Design of AFCS localizer mode for civil aircraft	
Hui Shao	Shanghai Aircraft Design & Research Institute
Kezhi Zhang	Shanghai Aircraft Design & Research Institute
Feng Yue	Shanghai Aircraft Design & Research Institute
Zhaoliang Zhang	Shanghai Aircraft Design & Research Institute
16:10-16:20	SatB13.3
151 Research on control characteristics of civil aircraft module integration fly by wire flight control system	
Xin Luo	Shanghai Aircraft Design & Research Institute
16:20-16:30	SatB13.4
220 A top-k similarity node search method based on	

convolutional neural network in complex network	
Xiangfu Meng	Liaoning Technical Univ.
Jing Wen	Liaoning Technical Univ.
Zihan Li	Liaoning Technical Univ.
16:30-16:40	SatB13.5
365 A fault-tolerant control scheme for civil aircraft based on prescribed performance control	
Jingqi Duan	Beihang Univ.
Yunjie Wu	Beihang Univ.
Ziyu Wang	Beihang Univ.
16:40-16:50	SatB13.6
418 Pneumatic lag analysis and testing of civil aircraft airspeed system	
Ge Song	Shanghai Aircraft Design & Research Institute
16:50-17:00	SatB13.7
533 CAT III auto-landing modal design and simulation for civil aircraft	
Yingxue Mei	Shanghai Aircraft Design & Research Institute
Jingwen Lv	Harbin Engineering Univ.
Hui Shao	Shanghai Aircraft Design & Research Institute
Chao Zhou	Shanghai Aircraft Design & Research Institute
17:00-17:10	SatB13.8
1027 Research on noise suppression of civilian airplane's localizer deviation signal	
Chang Liu	Shanghai Aircraft Design & Research Institute
Zhen Niu	Harbin Engineering Univ.
17:10-17:20	SatB13.9
1071 Design of transition state control method for civil aviation engine facing NOx emission reduction target	
Zhenghong Han	Civil Aviation Univ. of China
Wei Wang	Civil Aviation Univ. of China
Shuai Liu	Civil Aviation Univ. of China
17:20-17:30	SatB13.10
1093 Longitudinal control method of civil aircraft take-off guidance based on LQGLTR	
Jingyi Fu	Shanghai Aircraft Design & Research Institute
Yanfang Liu	Harbin Institute of Technology
17:30-17:40	SatB13.11
1159 Modeling of atmospheric disturbance during approach and landing of civil aircraft	
Qiang Yu	Harbin Engineering Univ.
Libin Li	Harbin Engineering Univ.
Dan Li	Harbin Engineering Univ.
Haonan Xu	Commercial Aircraft Corporation of China Ltd
Ce Zhang	Shanghai Aircraft Design &

Research Institute		Shang Liu	Beihang Univ.
17:40-17:50		SatB13.12	Xiaobao Wei
1246 A study on modeling and simulation method for aircraft generator voltage regulation			Beihang Univ.
Cong Liu	Shanghai Aircraft Design & Research Institute	Lulu Wang	Northwest A&F Univ.
Yang Ye	Shanghai Aircraft Design & Research Institute	Jing Zhang	Beihang Univ.
		Boyu Li	Beijing Institute of Aeronautical Materials
SatB14		Haosong Yue	Beihang Univ.
4th Floor Meeting Room 418		16:50-17:00	
Human-machine Cooperation		SatB14.7	
Chairs: Xiaolong Chen	AVIC Xi'an Flight Automatic Control Research Institut	595 界面视角对无人机人机协同中情景意识的影响	
Chao Jiang	AVIC Xi'an Flight Automatic Control Research Institut	Ao Zhu	Tsinghua Univ.
15:50-16:00		Guoxu Qin	
SatB14.1		Univ. of Electronic Science and Technology of China	
126 基于马塞克战理念的有人/无人集群控制结构研究		Jibo He	Tsinghua Univ.
Chao Jiang	AVIC Xi'an Flight Automatic Control Research Institute	Yidong Li	AVIC (CHENGDU) UAS Co., LTD
Xiheng Zang	AVIC Xi'an Flight Automatic Control Research Institute	17:00-17:10	
Yuwei Cui	Northwestern Polytechnical Univ.	SatB14.8	
16:00-16:10		788 Application of the causal graph-based fault inference method in reliability analysis	
SatB14.2		Hailong Wei	Tsinghua Univ.
247 无人机自主控制系统设计与人机权限分配		Pengpeng Guo	Tsinghua Univ.
Xiaolong Chen	AVIC Xi'an Flight Automatic Control Research Institute	Qing Li	Tsinghua Univ.
Xiheng Zang	AVIC Xi'an Flight Automatic Control Research Institute	17:10-17:20	
Jia Li	AVIC Xi'an Flight Automatic Control Research Institute	SatB14.9	
16:10-16:20		915 Research on supernumerary robotic limbs with relatively independent operation ability	
SatB14.3		Xiaobo Zhang	Shenyang Institute of Automation, CAS
261 Vision-based intelligent grasping system for moving object		Jinguo Liu	Shenyang Institute of Automation, CAS
Chenyu Wang	Beihang Univ.	17:20-17:30	
Cunyi Hu	Beihang Univ.	SatB14.10	
Yunjie Wu	Beihang Univ.	1001 An EEG classification method based on the combination of regularized common spatial patterns and particle swarm optimization	
16:20-16:30		Guopeng Qiao	Nanjing Univ. of Posts and Telecommunications
SatB14.4		Youyun Xu	Nanjing Univ. of Posts and Telecommunications
350 Human-machine interaction model for potential threat of enemy warship and operator expression		17:30-17:40	
Wenlin Wang	Wuhan Univ. of Science and Technology	SatB14.11	
Jin Liu	Wuhan Univ. of Science and Technology	1084 Grouping of the UAV swarm based on automatic fuzzy clustering	
Chao Pan	Hubei College of Economics	Zhiheng Liu	Beihang Univ.
16:30-16:40		Rui Zhou	Beihang Univ.
SatB14.5		Jinyong Chen	Beihang Univ.
361 基于改进预测校正的时间协同再入制导方法		Ning Zhang	AVIC Chengdu Aircraft Design & Research Institute
Yuan Gao	Beihang Univ.	17:40-17:50	
Rui Zhou	Beihang Univ.	SatB14.12	
Jinyong Chen	Beihang Univ.	1339 无人自转旋翼机飞行控制律设计及试验	
Jie Zhang	AVIC Chengdu Aircraft Design & Research Institute	Kefan Wu	Beihang Univ.
16:40-16:50		Song Wang	Beihang Univ.
SatB14.6		Yihan Zhao	Beihang Univ.
590 Center-of-mass-based robust grasp pose adaptation using RGBD camera and force/torque sensing		Jiaxin Tang	Beihang Univ.
		Renhao Fu	China Academy of Space Technology
		SatB15	
		5th Floor Meeting Room 502	
		US Swarm II	
		五层会议室 502	

Chairs: Xianglun Zhang	AVIC Xi'an Flight Automatic Control Research Institute	Xiheng Zang	AVIC Xi'an Flight Automatic Control Research Institute
Ling Zuo	AVIC Xi'an Flight Automatic Control Research Institute	Yukun Yang	AVIC Xi'an Flight Automatic Control Research Institute
15:50-16:00	SatB15.1	Qiang Tang	AVIC Xi'an Flight Automatic Control Research Institute
381 基于自抗扰方法的无人机控制律设计			
Ling Zuo	AVIC Xi'an Flight Automatic Control Research Institute	16:40-16:50	SatB15.6
Xianglun Zhang	AVIC Xi'an Flight Automatic Control Research Institute	707 Parameter dynamic selection method of multi-UAV cooperative search based on expert system	
Zhiyu Li	AVIC Xi'an Flight Automatic Control Research Institute	Zhenchang Liu	Science and Technology on Complex System Control and Intelligent Agent Cooperation Laboratory, Beijing
Qiang Tang	AVIC Xi'an Flight Automatic Control Research Institute	Mingrui Hao	Harbin Institute of Technology
Yazhou Yue	AVIC Xi'an Flight Automatic Control Research Institute	Donghui Wei	Beijing Electro-mechanical Engineering Institute
16:00-16:10	SatB15.2	Yuting Liu	Beijing Electro-mechanical Engineering Institute
503 Formation control of UAVs with prescribed performance based on backstepping method			
Shichao Ma	AVIC Xi'an Flight Automatic Control Research Institute	Hongyin Zhao	Beijing Electro-mechanical Engineering Institute
Xianglun Zhang	AVIC Xi'an Flight Automatic Control Research Institute	16:50-17:00	SatB15.7
Yukun Yang	AVIC Xi'an Flight Automatic Control Research Institute	783 Design and implementation of a ground control station for multiple fixed-wing UAVs	
Xiheng Zang	AVIC Xi'an Flight Automatic Control Research Institute	Jiayun Wen	AVIC Xi'an Flight Automatic Control Research Institute
16:10-16:20	SatB15.3	Qiang Tang	AVIC Xi'an Flight Automatic Control Research Institute
552 Trajectory optimization and control algorithm of perch landing for fixed-wing aircraft			
Guanjie Wang	AVIC Xi'an Flight Automatic Control Research Institute	Hao Li	AVIC Xi'an Flight Automatic Control Research Institute
Kepu Song	AVIC Xi'an Flight Automatic Control Research Institute	17:00-17:10	SatB15.8
Xianglun Zhang	AVIC Xi'an Flight Automatic Control Research Institute	921 Affine formation obstacle avoidance control of unmanned aerial vehicles with prescribed convergence time	
16:20-16:30	SatB15.4	Jiacheng Li	Northwestern Polytechnical Univ.
634 A software architecture for collaborative flight of fixed-wing UAV swarms			
Yukun Yang	AVIC Xi'an Flight Automatic Control Research Institute	Yangwang Fang	Northwestern Polytechnical Univ.
Qiang Tang	AVIC Xi'an Flight Automatic Control Research Institute	Shuaiqi Huangfu	Northwestern Polytechnical Univ.
Hao Li	AVIC Xi'an Flight Automatic Control Research Institute	Mengjie Zeng	Nanjing Univ. of Aeronautics and Astronautics
Shichao Ma	AVIC Xi'an Flight Automatic Control Research Institute	Guangyu Yang	Northwestern Polytechnical Univ.
Xiheng Zang	AVIC Xi'an Flight Automatic Control Research Institute	Tianbo Deng	Northwestern Polytechnical Univ.
16:30-16:40	SatB15.5	17:10-17:20	SatB15.9
701 Vision-based UAV cooperative multi-target location			
Hao Li	AVIC Xi'an Flight Automatic Control Research Institute	1095 Distributed fixed-time consensus control for uncertain nonlinear multi-agent systems with unmatched disturbances	
		Wennian Qi	Harbin Institute of Technology
		17:20-17:30	SatB15.10
		1124 A space formation transform method based on formation database	
		Wei Qin	AVIC Xi'an Flight Automatic Control Research Institute
		Xianglun Zhang	AVIC Xi'an Flight Automatic Control Research Institute
		Yazhou Yue	AVIC Xi'an Flight Automatic Control Research Institute
		Ling Zuo	AVIC Xi'an Flight Automatic Control Research Institute

Qiang Tang	Control Research Institute	Chunyan Wang	Beijing Institute of Technology
	AVIC Xi'an Flight Automatic	16:30-16:40	SatB16.5
Control Research Institute		637 <i>Intelligent optimal learning control for cooperative formation tracking of VTOL UAVs</i>	
17:30-17:40	SatB15.11	Jianan Wang	Beijing Institute of Technology
1125 <i>The fixed-wing UAVs formation transformation with time consistency</i>		Kaidan Li	Beijing Institute of Technology
Wendong Gai	Shandong Univ. of Science and Technology	Kewei Xia	Beijing Institute of Technology
Yihua Zhao	Shandong Univ. of Science and Technology	16:40-16:50	SatB16.6
Jing Zhang	Shandong Univ. of Science and Technology	787 <i>Research on the formation reconstruction of multi-aircraft based on mission requirements</i>	
Guilin Zhang	Shandong Univ. of Science and Technology	Yujie Liu	Naval Aviation Univ.
17:40-17:50	SatB15.12	Yue Li	92728 Army
1156 <i>Relation adaptation of the grouped multiagent network in task allocation</i>		Wei Han	No.1 Department of Naval Aeronautical and Astronautical Univ.
Kai Li	Beihang Univ.	Xiangwan Liu	92728 Army
Sentang Wu	Beihang Univ.	Weiguo Zhong	Naval Station Univ.
Ying Wang	Beijing Normal Univ.	16:50-17:00	SatB16.7
SatB16 5th Floor Meeting Room 503		1079 <i>Nonsingular distributed cooperative guidance law with field-of-view limits</i>	
US Swarm IV 五层会议室 503		Jianan Wang	Beijing Institute of Technology
Chairs: Chunyan Wang	Beijing Institute of Technology	Haifeng Zhang	Beijing Institute of Technology
Kewei Xia	Beijing Institute of Technology	Wei Dong	Beijing Institute of Technology
15:50-16:00	SatB16.1	Chunyan Wang	Beijing Institute of Technology
270 <i>基于因子图的无人机集群分布式协同导航算法研究</i>		Chengfeng Wu	Beijing Institute of Mechanical and Electrical Engineering
Hangyu Dai	Beihang Univ.	Hui Li	Beijing Institute of Mechanical and Electrical Engineering
Jiuqing Wan	Beihang Univ.	Xiaoyun Guo	Beijing Institute of Mechanical and Electrical Engineering
Sheng Quan	CASIC	17:00-17:10	SatB16.8
16:00-16:10	SatB16.2	1162 <i>Sliding mode formation control based on event-triggered strategy for UAVs</i>	
528 <i>Multi-constraint online guidance method based on meta-learning</i>		Juntao Zhang	NorthWestern Polytechnonlogy Univ.
Chao Li	Beijing Institute of Technology	Jun Fang	NorthWestern Polytechnonlogy Univ.
Fenfen Xiong	Beijing Institute of Technology	Pengfei Cheng	Xi'an Modern Control Technology Research Institute
Yue Zhao	Beijing Institute of Technology	Yong Guo	NorthWestern Polytechnonlogy Univ.
16:10-16:20	SatB16.3	17:10-17:20	SatB16.9
600 <i>Sliding-mode control of missiles formation via virtual structures</i>		1197 <i>Research on trajectory prediction of near space target based on NAR neural network</i>	
Ziao Tang	National Univ. of Defense Technology	Xin Yi	Beijing Aerospace Automatic Control Institute
Weimin Bao	China Aerospace Science and Technology Corporation	Ling Li	Beijing Aerospace Automatic Control Institute
Ruizhi He	National Univ. of Defense Technology	17:20-17:30	SatB16.10
Zihao Zhang	National Univ. of Defense Technology	1231 <i>Fast consensus of second-order multi-agent systems based on past state prediction</i>	
16:20-16:30	SatB16.4	Chenghua Yao	Nanjing Univ. of Aeronautics and Astronautics
616 <i>Distributed control algorithm for modular multi-rotor unmanned aerial vehicle</i>		Jing Zhu	Nanjing Univ. of Aeronautics and Astronautics
Jianan Wang	Beijing Institute of Technology		
Mingyang Zhang	Beijing Institute of Technology		
Kewei Xia	Beijing Institute of Technology		

	Astronautics	Chen Lu	Beihang Univ.
Xiangping Zhai	Nanjing Univ. of Aeronautics and Astronautics	Hongmei Liu	Beihang Univ.
		Yu Ding	Beihang Univ.
17:30-17:40	SatB16.11	Yujie Cheng	Beihang Univ.
1313 A modified finite-time guidance law with impact angle constraint			
Jianan Wang	Beijing Institute of Technology	Laifa Tao	Beihang Univ.
Xizi Tao	Beijing Institute of Technology	Mingliang Suo	Beihang Univ.
Wei Dong	Beijing Institute of Technology	17:00-17:10	SatB17.8
Huixia Wang	Beijing Aerospace Automatic Control Institute	833 民机自动飞行控制虚拟仿真实验设计与实现	
Chunyan Wang	Beijing Institute of Technology	Lunlong Zhong	Civil Aviation Univ. of China
17:40-17:50	SatB16.12	Peng Zhang	Civil Aviation Univ. of China
1354 Prescribed performance formation control for second-order multi-agent systems with connectivity and collision constraints			
Yi Huang	Beijing Institute of Technology	17:10-17:20	SatB17.9
Guangtong Xu	Tsinghua Univ.	835 民航特色“飞控类”课程虚拟教研室建设研究	
SatB17	5th Floor Meeting Room 505	Lunlong Zhong	Civil Aviation Univ. of China
GNC Education II	五层会议室 505	Peng Zhang	Civil Aviation Univ. of China
Chairs: Lingling Wang	Beihang University	17:20-17:30	SatB17.10
Bo Yang	Beihang University	859 空天信特色的创新人才培养体系构建与实践	
15:50-16:00	SatB17.1	Shaopeng Dong	Beihang Univ.
50 通识教育和课程思政协同的航空航天概论课程教学分析与研究			
Longsheng Chen	Nanchang Hangkong Univ.	Mei Yuan	Beihang Univ.
16:00-16:10	SatB17.2	SatB18 5th Floor Aisle	
127 OBE+BOPPPS 思政教学模式构建			
Meijie Wu	Beijing Institute of Technology	Poster Session 2 四层展厅	
Ting Zhang	Beijing Institute of Technology	15:50-17:50	SatB18.1
Ruijing Liu	Beijing Institute of Technology	61 A survey of relative motion dynamics and control of distributed satellite formation	
16:10-16:20	SatB17.3	Chunyang Liu	Shanghai Aerospace Control Technology Institute
146 依托科研案例的机器人工程专业实践教学模式改革			
Lipeng Wang	Harbin Engineering Univ.	Jingji Wang	Shanghai Aerospace Control Technology Institute
Zhilin Liu	Harbin Engineering Univ.	Yong Huang	Shanghai Aerospace Control Technology Institute
Hao Meng	Harbin Engineering Univ.	Junxiong Yin	Shanghai Aerospace Control Technology Institute
Zhen Yang	Harbin Engineering Univ.	Hao Yu	Shanghai Aerospace Control Technology Institute
16:20-16:30	SatB17.4	15:50-17:50	SatB18.2
191 擂台赛对 PBL 教学中项目设计成果完备性的促进			
Shuguang Sun	Civil Aviation Univ. of China	80 A review on tracking control of the underactuated vessel with time delays	
16:30-16:40	SatB17.5	Yuhan Cao	Hohai Univ.
396 Research on comprehensive evaluation of excellent college teachers from the perspective of fuzzy mathematics			
Xuanze Zhao	Zhejiang Univ. of Finance & Economics dongfang College	Yanbo Feng	Hohai Univ.
Xiaohui Zhou	Fujian Police College	Beining Chen	Hohai Univ.
16:40-16:50	SatB17.6	15:50-17:50	SatB18.3
699 电气类综合实验课程思政建设与实践			
Ruijing Liu	Beijing Institute of Technology	99 Optimal guidance with impact angle control based time-to-go estimation	
Ting Zhang	Beijing Institute of Technology	Zuo-e Fan	Navy Submarine Academy
Meijie Wu	Beijing Institute of Technology	Linping Feng	Navy Submarine Academy
16:50-17:00	SatB17.7	Dongping Sun	Navy Submarine Academy
799 《面向工业 4.0 的创新创业学习与实践》课程体系改革与教学模式研究			
Jian Ma	Beihang Univ.	15:50-17:50	SatB18.4
		119 改进鲸鱼优化算法和熵测度的图像多阈值分割	
		Qingxin Liu	Hainan Univ.
		Ni Li	Hainan Normal Univ.
		Heming Jia	Sanming Univ.
		Qi Qi	Hainan Univ.
		15:50-17:50	SatB18.5

Mingxing Chen	Nanjing Univ. of Aeronautics and Astronautics	299 Research on the construction method of the index system for the performance evaluation of navigation confrontation	Yue Wang	PLA Strategic Support Force Information Engineering Univ.
Zhi Xiong	Nanjing Univ. of Aeronautics and Astronautics		Fuping Sun	PLA Strategic Support Force Information Engineering Univ.
Fengyi Song	Nanjing Univ. of Aeronautics and Astronautics		Jinming Hao	PLA Strategic Support Force Information Engineering Univ.
Rong Wang	Nanjing Univ. of Aeronautics and Astronautics		Xian Wang	PLA Strategic Support Force Information Engineering Univ.
15:50-17:50	SatB18.6		15:50-17:50	SatB18.13
197 多机电作动器同步控制系统仿真研究			310 Study on the formation maintenance control of the satellites with different area-mass-ratio considering atmosphere density evolution	
Xiao Lei	AVIC Qingan Group Co.,Ltd		Yue Liu	DFH Satellite Co., Ltd
Cuicui Li	AVIC Qingan Group Co.,Ltd		Mengying Jiang	DFH Satellite Co., Ltd
Yang Zhang	AVIC Qingan Group Co.,Ltd		Yingjing Qian	Beijing Univ. of Technology
15:50-17:50	SatB18.7		Xin Li	Beijing Univ. of Technology
198 Analysis on positioning performance of BDS-3 system in polar region			Zhifang Fan	DFH Satellite Co., Ltd
Xiaoqin Jin	Tianjin Navigation Instrument Research Institute		Baozhen Yang	Beijing Univ. of Technology
Ruoshun Ma	Tianjin Navigation Instrument Research Institute		15:50-17:50	SatB18.14
Jiancong Wang	Tianjin Navigation Instrument Research Institute		322 民用飞机高升力系统先进技术及发展	
Ruitao Chu	Tianjin Navigation Instrument Research Institute		Gaojie Ma	AVIC Qingan Group Co.,Ltd
Shuaiyong Zheng	Tianjin Univ. of Technology		Gang An	AVIC Qingan Group Co.,Ltd
Yin Lu	Tianjin Navigation Instrument Research Institute		Youmin Shi	AVIC Qingan Group Co.,Ltd
15:50-17:50	SatB18.8		Ning Kang	AVIC Qingan Group Co.,Ltd
223 Non-stationary interference mitigation for GNSS using sparse representation			Junshuai Sun	AVIC Qingan Group Co.,Ltd
Yuetao Ren	Northwestern Polytechnical Univ.		15:50-17:50	SatB18.15
Yongfeng Zhi	Northwestern Polytechnical Univ.		403 终端区航空器三维实时监视系统仿真研究	
Huan Gao	Northwestern Polytechnical Univ.		Xiaoyun Shen	Civil Aviation Univ. of China
Jun Zhang	Northwestern Polytechnical Univ.		Shuo Zhang	Civil Aviation Univ. of China
15:50-17:50	SatB18.9		Siyuan Zhang	Civil Aviation Univ. of China
239 A visual odometry using convolutional neural network			15:50-17:50	SatB18.16
Dexin Xu	Harbin Engineering Univ.		434 Research status and application of mission assignment method and cooperative positioning and navigation for cluster aircraft	
Zhaoyang Zhang	Harbin Engineering Univ.		Danting Sheng	Science and Technology on Complex System Control and Intelligent Agent Cooperation Laboratory
15:50-17:50	SatB18.10		Mingrui Hao	Harbin Institute of Technology Univ.
259 基于地月激光测距的月面高精度 TDOA/AOA 导航方法			15:50-17:50	SatB18.17
Yisu Yan	Harbin Institute of Technology		535 A survey on unmanned aerial vehicle swarm communication and navigation	
Baoyi Cui	Harbin Institute of Technology		Chubing Lv	National Univ. of Defense Technology
Xiaohui Fan	Harbin Institute of Technology		Ruihang Yu	National Univ. of Defense Technology
Zhouzhe Wu	Harbin Institute of Technology		Juliang Cao	National Univ. of Defense Technology
Zhiyan Xu	Harbin Institute of Technology		Chen Gong	Univ. of Science and Technology of China
15:50-17:50	SatB18.11		Wenqi Wu	National Univ. of Defense Technology
288 Autonomous operation control for MEO/GEO satellites based on mission scheduling			Xueying Wang	National Univ. of Defense Technology
Changqing Miao	China Academy of Space Technology		15:50-17:50	SatB18.18
Xingang Liang	China Academy of Space Technology		555 差分进化算法在阵风响应减缓控制中应用	
Jiaming Wang	China Academy of Space Technology		Shikang Chen	Civil Aviation Univ. of China
Yang Zhang	China Academy of Space Technology		Shibin Yang	Civil Aviation Univ. of China
15:50-17:50	SatB18.12			

Xiaozhe Sun	Civil Aviation Univ. of China	Shaofei Qin	State Key Laboratory of Astronautic Dynamics
15:50-17:50	SatB18.19		
557 Research on GPS / INS polar integrated navigation algorithm based on abscissa system		Jianhai Zhang	State Key Laboratory of Astronautic Dynamics
Qiang Zhang	Civil Aviation Flight Univ. of China	Yaruixi Gao	State Key Laboratory of Astronautic Dynamics
Qiang Zhang	Civil Aviation Flight Univ. of China		
Xianbo Shi	Civil Aviation Flight Univ. of China	Meng Wei	Xi'an Satellite Control Center
15:50-17:50	SatB18.20	Haoxue Li	Xi'an Satellite Control Center
607 基于综合赋权的目标可攻击价值综合评估排序		15:50-17:50	SatB18.27
Xuean Sun	Nanjing Univ. of Aeronautics & Astronautics	927 Cooperative path planning algorithm based on artificial potential field method	
Yin Wang	Nanjing Univ. of Aeronautics & Astronautics	Yuecheng Liu	Beijing Aerospace Automatic Control Institute
Qixian Zhou	Nanjing Univ. of Aeronautics & Astronautics	Guanfeng Yu	AVIC Xi'an Aeronautics Computing Technique Research Institute
15:50-17:50	SatB18.21	Zhenpo Tian	Beijing Aerospace Automatic Control Institute
658 Research on cooperative target design and pose estimation for UAV precise autonomous landing		Ju Wen	Beijing Aerospace Automatic Control Institute
Anxiao Zhou	Northwestern Polytechnical Univ.	15:50-17:50	SatB18.28
Qi Feng	Northwestern Polytechnical Univ.	934 基于模型的高升力系统需求确认与验证技术研究	
15:50-17:50	SatB18.22	Huihui Zhang	QingAn Group co.,LTD
703 Improved YOLOv4 network for small target detection		Junshuai Sun	QingAn Group co.,LTD
Chenyin Ding	Jiangsu Normal Univ.	Xiuxin Wang	QingAn Group co.,LTD
Zhizheng Xu	Jiangsu Normal Univ.	Pei Lei	QingAn Group co.,LTD
Na Duan	Jiangsu Normal Univ.	Pengfei Liu	QingAn Group co.,LTD
15:50-17:50	SatB18.23	15:50-17:50	SatB18.29
744 Ship trajectory anomaly detection based on TCN model		991IMPOS 联邦实时组合方法	
Jixing Hao	Inner Mongolia Univ.	Jianli Li	Beihang Univ.
Hui Zhang	Inner Mongolia Univ.	Mengdi Wei	Beihang Univ.
15:50-17:50	SatB18.24	Qipeng Wang	Beihang Univ.
803 Control strategies of motor for shaftless rim-driven aviation electric propulsion system		Wu Zhang	Beihang Univ.
Haifeng Huang	Beihang Univ.	15:50-17:50	SatB18.30
Wenjiang Yang	Beihang Univ.	994 Sensing accuracy improvement for gyrowheel based on sensitivity analysis and accurate estimation of tilt-related signals	
Mingliang Bai	Beihang Univ.	Yuyu Zhao	Civil Aviation Univ. of China
Xuanyu Yao	Aero Engine Academy of China	Guancong Li	Civil Aviation Univ. of China
Lin Kang	Beihang Univ.	Yuxiao Wang	Civil Aviation Univ. of China
Pengjin He	Beihang Univ.	Hang Feng	Civil Aviation Univ. of China
Cun Xu	Beihang Univ.	15:50-17:50	SatB18.31
Chengzhi Jiang	Aeroengine Research Institute	997 Object detection in UAV ground-based visual landing process based on improved faster R-CNN	
15:50-17:50	SatB18.25	Mujun Xie	Changchun Univ. of Technology
819 Research on improved PIO based on adaptive inertia weight strategy and fruit fly optimization strategy		Yanran Cao	Changchun Univ. of Technology
Tingting Bai	Nanjing Univ. of Aeronautics & Astronautics	Changhong Jiang	Changchun Univ. of Technology
Daobo Wang	Nanjing Univ. of Aeronautics & Astronautics	Chuansong Liu	Changchun Univ. of Technology
Yan Jiang	Nanjing Univ. of Aeronautics & Astronautics	Yuxin Ye	Changchun Univ. of Technology
15:50-17:50	SatB18.26	Chengwu Shen	Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences
846 Research on an adaptive processing method of fast varying parameters in telemetry data based on envelope		15:50-17:50	SatB18.32
1008 基于误差系数在线辨识的弹道导弹捷联星光惯性复合制导方			

Yi Zhao	National Univ. of Defense Technology	Fengqi Zheng	China Aerodynamics Research and Development Center
Dingjie Wang	National Univ. of Defense Technology		
Hongbo Zhang	National Univ. of Defense Technology	15:50-17:50	SatB18.39
Guojian Tang	National Univ. of Defense Technology	1211 Research of pedestrian tracking algorithm in complex environment based on YOLOv5 and TransT	
15:50-17:50	SatB18.33	Chuangxin He	Shanghai Univ.
1052 Position error bound of the AOA based cooperative localization in 3D space		Jingyun Luo	Shanghai Univ.
Feng Qiu	Hainan Univ.	Nan Li	Shanghai Univ.
Weidong Zhang	Shanghai Jiao Tong Univ.	Zhonghua Miao	Shanghai Univ.
15:50-17:50	SatB18.34	15:50-17:50	SatB18.40
1087 Design of self-oscillating cesium optically pumped magnetometer		1218 Research on modeling method of UCAV swarm architecture based on capability	
Yiming Huang	Shanghai Jiao Tong Univ.	Jun Wang	Chinese Aeronautical Establishment
Manruo Luo	Shanghai Jiao Tong Univ.	Chuangye Chang	Beihang Univ.
Zhaocai Wu	Second Institute of OCEANOGRAPHY, MNR	Yuchen Zhang	Chinese Aeronautical Establishment
Hua Liu	Shanghai JiaoTong Univ.	Delin Li	Chinese Aeronautical Establishment
15:50-17:50	SatB18.35	15:50-17:50	SatB18.41
1128 基于 MI-RRT* 算法的路径规划研究		1234 A Bio-inspired array skylight compass for urban ground navigation	
Qiang Yu	Harbin Engineering Univ.	Jing Huang	National Univ. of Defense Technology
Zhaohong Peng	Harbin Engineering Univ.	Lilian Zhang	National Univ. of Defense Technology
Yicheng Gao	Harbin Engineering Univ.	Xiaofeng He	National Univ. of Defense Technology
Dan Li	Harbin Engineering Univ.	Chen Fan	National Univ. of Defense Technology
Libin Li	Harbin Engineering Univ.	Wenzhou Zhou	National Univ. of Defense Technology
15:50-17:50	SatB18.36	Xuesong Wu	National Univ. of Defense Technology
1139 An impact angle control guidance via self-restrained look angle shaping		Xiaoping Hu	National Univ. of Defense Technology
Xiangxiang Li	Beihang Univ.	15:50-17:50	SatB18.42
Wanchun Chen	Beihang Univ.	1239 GEO 退役卫星重组装任务设计	
Zhongyuan Chen	Beihang Univ.	Di Yang	National Univ. of Defense Technology
Shen Zhang	China Academy of Space Technology	Yazhong Luo	National Univ. of Defense Technology
15:50-17:50	SatB18.37	15:50-17:50	SaB18.43
1181 Applicability of conventional longitudinal flying qualities criteria in the ground attack mission		1243 Temperature compensation method of accelerometer based on improved pigeon-inspired optimization	
Haipeng Yin	Beijing Institute of Space Long March Vehicle	Zhihua Li	Beihang Univ.
Wei Li	Beijing Institute of Space Long March Vehicle	15:50-17:50	SatB18.44
Pinghui Jia	Beijing Institute of Space Long March Vehicle	1264 UAV task assignment based on potential game with improved SAP algorithm	
Qiang Li	Beijing Insititute of Technology	Haomiao Wang	Beihang Univ.
Yunpeng Cheng	Beijing Institute of Space Long March Vehicle	Chen Wei	Beihang Univ.
Hailiang Liu	Beihang Univ.	Haibin Duan	Beihang Univ.
Lixin Wang	Beihang Univ.	15:50-17:50	SaB18.45
15:50-17:50	SatB18.38	1273 Calibration problem for accelerometer unit with restriction on its admissible orientations	
1186 Research on transition flight control method of QTR aircraft		Haoling Yin	Lomonosov Moscow State Univ.
Yanqing Cheng	China Aerodynamics Research and Development Center	Xinlei Sun	Beihang Univ.
Yunxiang Zhang	China Aerodynamics Research and Development Center		
Gong Chen	China Aerodynamics Research and Development Center		

Technical Program for Sunday, August 7, 2022

SunA1	3rd Floor Meeting Room 301
Nonlinear Control	三层会议室 301
Chairs: Zhiguang Feng	Harbin Engineering Univ.
Kaiyan Niu	Harbin Engineering Univ.
13:30-13:40	SunA1.1
358 <i>Extended dissipative control for discrete-time T-S fuzzy singular delay systems</i>	
Jiangrong Li	Yan'an Univ.
13:40-13:50	SunA1.2
425 <i>基于扰动观测器的超空泡航行体 H_∞ 状态反馈控制器设计</i>	
Xinhua Zhao	Harbin Engineering Univ.
Kaiyan Niu	Harbin Engineering Univ.
Xue Wang	Harbin Engineering Univ.
Zhiguang Feng	Harbin Engineering Univ.
13:50-14:00	SunA1.3
570 <i>Moving-gimbal effect suppression of MSCMG based on fractional-order disturbance observer</i>	
Haoan Wang	Beihang Univ.
Zenghui Wang	Beihang Univ.
Xiuqi Zhao	Beihang Univ.
Zhenzhen Zhang	Ningbo Institute of Technology, Beihang Univ.
Min Zhang	Beihang Univ.
Yongyan Liu	Beihang Univ.
14:00-14:10	SunA1.4
666 <i>Adaptive control of magnetic levitation system</i>	
Zhenwei Ma	Sun Yat-Sen Univ.
Jiarui Ma	Sun Yat-Sen Univ.
Jinbo Wang	Sun Yat-Sen Univ.
Hongbo Chen	Sun Yat-Sen Univ.
14:10-14:20	SunA1.5
761 <i>Adaptive fuzzy nonsingular finite-time control for uncertain nonlinear systems</i>	
Yongchao Liu	Harbin Engineering Univ.
Bowen Zeng	Harbin Engineering Univ.
14:20-14:30	SunA1.6
805 <i>Stability analysis of radome parasitic loop based on Lur'e system model</i>	
Xu Chen	Beihang Univ.
Yao Xiao	Beihang Univ.
Lingyu Yang	Beihang Univ.
Jing Zhang	Beihang Univ.
14:30-14:40	SunA1.7
837 <i>Disturbance observer-based finite-time tracking control for a class of second-order nonlinear systems with mismatched and matched uncertainties</i>	
Xinyu Zhang	Univ. of Electronic Science and Technology of China
Linxi Xu	Univ. of Electronic Science and Technology of China

Yang Zhu	Southwest Jiaotong University
Lu Chen	Univ. of Electronic Science and Technology of China
Gun Li	Univ. of Electronic Science and Technology of China
14:40-14:50	SunA1.8
955 <i>Time-optimal control algorithm of aircraft maneuver</i>	
Xin Bao	Northwestern Polytechnical Univ.
Chao Jiang	Flight Automatic Control Research Institute
14:50-15:00	SunA1.9
962 <i>SMT path optimization based on pointer network</i>	
Yuhang Bi	Harbin Engineering Univ.
Zhiguang Feng	Harbin Engineering Univ.
15:00-15:10	SunA1.10
1100 <i>Reachable set estimation for singularly perturbed systems</i>	
Jiawang Wang	Bohai Univ.
Liang Zhang	Bohai Univ.
Xudong Zhang	Bohai Univ.
15:10-15:20	SunA1.11
1101 <i>Reachable set estimation for nonlinear systems with disturbance via sliding mode control</i>	
Xudong Zhang	Bohai Univ.
Liang Zhang	Bohai Univ.
Jiawang Wang	Bohai Univ.
15:20-15:30	SunA1.12
1318 <i>Fuzzy-model-based robust predictive control for path tracking in autonomous driving</i>	
Jun Zhang	Tongji Univ.
Changzhu Zhang	Tongji Univ.
Zhuping Wang	Tongji Univ.
Hao Zhang	Tongji Univ.
SunA2	3rd Floor Meeting Room 302
Control Theory I	三层会议室 302
Chairs: Xiang Yu	Beihang Univ.
Tao Chao	Harbin Institute of Technology
13:30-13:40	SunA2.1
121 <i>Nonlinear modeling of mixed-wing mode for a new ducted tiltrotor UAV by DATCOM</i>	
Jing Huang	Xi'an Univ. of Technology
Ban Wang	Concordia Univ.
Yangping Deng	Northwestern Polytechnical Univ.
Youmin Zhang	Concordia Univ.
13:40-13:50	SunA2.2
274 <i>Nonlinear spline prioritization optimization adaptive filter</i>	
Wenyan Guo	Northwestern Polytechnical Univ.
Yongfeng Zhi	Northwestern Polytechnical Univ.
Huan Gao	Northwestern Polytechnical Univ.
13:50-14:00	SunA2.3
661 <i>An adaptive extended Kalman filter for attitude estimation using low-cost IMU from motor vibration disturbance</i>	
Zhenduo Xu	Harbin Institute of Technology

Junxi Tian	Harbin Institute of Technology	Futao Wang	China Academy of Space Technology
Tao Chao	Harbin Institute of Technology	Pengfei Wang	China Academy of Space Technology
Ke Fang	Harbin Institute of Technology	Bingyang Li	China Academy of Space Technology
Ming Yang	Harbin Institute of Technology		
14:00-14:10	SunA2.4	15:10-15:20	SunA2.11
767 基于强化学习的复杂场景民用飞机姿态控制			
Xinhong Xie	Shanghai Jiao Tong Univ.	Jiacheng Chen	Beihang Univ.
Shiqian Liu	Shanghai Jiao Tong Univ.	Xu Yang	Beihang Univ.
Weizhi Lyu	Shanghai Jiao Tong Univ.	Yuxiang Ma	Beihang Univ.
Zhenjie Ma	Shanghai Jiao Tong Univ.	Dong Li	Beihang Univ.
Qian Zhang	Shanghai Jiao Tong Univ.	Sujun Dong	Beihang Univ.
14:10-14:20	SunA2.5	Yunhua Li	Beihang Univ.
802 Coaxial tracking method of infrared search and tracking system based on photoelectric calibration			
Feng Zhang	CAS Institute of Automation	15:20-15:30	SunA2.12
14:20-14:30	SunA2.6	1261 Trajectory tracking of maneuvering reentry vehicle using nonlinear estimate model	
806 Estimation method based on EKF for radome error slope			
Yao Xiao	Beihang Univ.	Yunpeng Chen	Beijing Institute of Space Long March Vehicle
Xu Chen	Beihang Univ.	Wei Li	Beijing Institute of Space Long March Vehicle
Jing Zhang	Beihang Univ.	Pinghui Jia	Beijing Institute of Space Long March Vehicle
Lingyu Yang	Beihang Univ.	Manqiao Wu	China Academy of Launch Vehicle Technology
14:30-14:40	SunA2.7	Haipeng Yin	Beijing Institute of Space Long March Vehicle
895 Design of multivariable control system for variable cycle engine and hardware-in-the-loop simulation			
Jiale He	Northwestern Polytechnical Univ.	SunA3 3rd Floor Meeting Room 303 GNC (Spacecraft) III 三层会议室 303	
Yingqing Guo	Northwestern Polytechnical Univ.		
Luyang Liu	Northwestern Polytechnical Univ.	Chairs: Shufan Wu	Shanghai Jiaotong Univ.
Wanli Zhao	Northwestern Polytechnical Univ.	Qiang Shen	Shanghai Jiaotong Univ.
Yunhui Dong	Northwestern Polytechnical Univ.	13:30-13:40	SunA3.1
14:40-14:50	SunA2.8	118 包含有界切换增益的空间惯性传感器输出调节积分模型参考自适应控制	
980 Damage location and Identification of underground structures based on brillouin scattering and extended kalman filter technique			
Xiaokun Fan	Central Research Institute of Building and Construction Co., Ltd., MCC Group	Xiaoyun Sun	Shanghai Jiao Tong Univ.
Sheng Wang	Central Research Institute of Building and Construction Co., Ltd., MCC Group	Shufan Wu	Shanghai Jiao Tong Univ.
Yanchao Shao	Central Research Institute of Building and Construction Co., Ltd., MCC Group	Qiang Shen	Shanghai Jiao Tong Univ.
		Haiqing Fu	Shanghai Jiao Tong Univ.
14:50-15:00	SunA2.9	13:40-13:50	SunA3.2
1011 A Game between cyber attack and defense under the topology of satellite networks			
Yucheng Cui	Beihang Univ.	Yufei Xu	Shanghai Institution of Satellite engineering
Zhiyu Xi	Beihang Univ.	Zhu Zhu	Shanghai Institution of Satellite engineering
Xingpeng Zhang	Beihang Univ.	Jinjin Xie	Shanghai Institution of Satellite engineering
15:00-15:10	SunA2.10	Yi Xu	Shanghai Institution of Satellite engineering
1109 Attitude control of multi-motion mode spherical probe robots based on decoupled dynamics			
Wenke Ma	China Academy of Space Technology	Yanbin Zhao	Shanghai Institution of Satellite engineering
Chenyang Chang	Peking Univ.		
Yuxue Cao	China Academy of Space Technology	13:50-14:00	SunA3.3
582 Learning based K-band microwave ranging system time			

delay control for earth gravity measurements

Xiaoliang Wang	Shanghai Jiao Tong Univ.
Hongxu Zhu	Shanghai Jiao Tong Univ.
Qiang Shen	Shanghai Jiao Tong Univ.
Shufan Wu	Shanghai Jiao Tong Univ.
Nan Wang	Shanghai Jiao Tong Univ.
Xuan Liu	Institute of Space Radio Technology Xi'an
Dengfeng Wang	Institute of Space Radio Technology Xi'an
Zhu Zhu	Shanghai Institute of Satellite Engineering
14:00-14:10	SunA3.4

623 *Attitude maneuver decoupling control method of spacecraft based on diagonalization of inertia matrix*

Yijie He	China Aerospace Science and Technology Corporation
Jinhua Sun	China Aerospace Science and Technology Corporation
Lijun Ye	Shanghai Aerospace Control Technology Institute
14:10-14:20	SunA3.5

1024 *Overview of the present situation of LEO precise orbit determination using BDS*

Chong Wang	State Key Laboratory of Astronautic Dynamics
Jun Zhu	State Key Laboratory of Astronautic Dynamics
Yanan Fang	State Key Laboratory of Astronautic Dynamics
Jingyan Wang	State Key Laboratory of Astronautic Dynamics
Bin Liu	State Key Laboratory of Astronautic Dynamics
14:20-14:30	SunA3.6

1056 *Attitude and orbit control for closely observing attitude-dodging target*

Xuan Huang	National Univ. of Defense Technology
Jin Zhang	National Univ. of Defense Technology
Hanyu Zhang	National Univ. of Defense Technology
Yuanhe Liu	National Univ. of Defense Technology
14:30-14:40	SunA3.7

1118 *基于改进 Kinky Inference 的输出调节自适应无拖曳控制*

Xiaoyun Sun	Nanjing Univ. of Aeronautics and Astronautics
Qiang Shen	Shanghai Jiao Tong Univ.
Shufan Wu	Shanghai Jiao Tong Univ.
14:40-14:50	SunA3.8

1149 *空间引力波探测星间激光捕获方法设计*

Qianyun Zhang	Nanjing Univ. of Aeronautics and Astronautics
Shufan Wu	Shanghai Jiao Tong Univ.
Deren Gong	Shanghai Jiao Tong Univ.
14:50-15:00	SunA3.9

1175 *ESO based adaptive fault-tolerant control for drag-free satellite*

Shiping Mao	Shanghai Jiao Tong Univ.
Shufan Wu	Shanghai Jiao Tong Univ.
15:00-15:10	SunA3.10

1198 *Study on spacecraft ultra-stable platform control for Tai Chi mission based on LTV-MPC*

Xin Cao	Shanghai Jiao Tong Univ.
Shufan Wu	Shanghai Jiao Tong Univ.
Deren Gong	Shanghai Jiao Tong Univ.
15:10-15:20	SunA3.11

1245 *基于涡流搜索的空间惯性传感器驱动电路参数优化*

Wenlong Song	Northeast Forestry Univ.
Chong Mo	Northeast Forestry Univ.
Jiawei Zhang	Northeast Forestry Univ.
Yonghao Xie	Northeast Forestry Univ.
Dongqi Pan	Northeast Forestry Univ.
Dawei Mu	Northeast Forestry Univ.
Jianping Huang	Northeast Forestry Univ.
Ming Hu	Huazhong Univ. of Science and Technology
15:20-15:30	SunA3.12

1290 *空间惯性传感器缓冲器电路噪声建模与分析*

Wenlong Song	Northeast Forestry Univ.
Dongqi Pan	Northeast Forestry Univ.
Chong Mo	Northeast Forestry Univ.
Ming Hu	Huazhong Univ. of Science and Technology
Yonghao Xie	Northeast Forestry Univ.
Dawei Mu	Northeast Forestry Univ.
Jiawei Zhang	Northeast Forestry Univ.
Jianping Huang	Northeast Forestry Univ.

SunA4 3rd Floor Meeting Room 305
GNC (Aircraft) III 三层会议室 305

Chairs: Hui Zhang	Inner Mongolia Univ.
Wei Luo	Nanjing Univ. of Aeronautics and Astronautics
13:30-13:40	SunA4.1

141 *具有边界保护性能的直升机飞-发一体化控制律设计*

Shu Yang	Northwestern Polytechnical Univ.
13:40-13:50	SunA4.2

181 *基于波动控制的直升机吊挂鲁棒减摆技术*

Honghong Li	Nanjing Univ. of Aeronautics and Astronautics
Yanhua Han	Nanjing Univ. of Aeronautics and Astronautics

13:50-14:00		SunA4.3	Qing Li		Tsinghua Univ.
271 <i>Research on adaptive control method of wing morphing aircraft based on neural network</i>			14:50-15:00		SunA4.9
Shuang Ma	Beijing Aerospace Automatic Control Institute		1015 <i>Research on attitude control of unmanned helicopter with slung load combined input shaper and linear active disturbance rejection control</i>		
Xiaodong Liu	Beijing Aerospace Automatic Control Institute		Changfei Cui	Nanjing Univ. of Aeronautics and Astronautics	
Bo Gao	Beijing Aerospace Automatic Control Institute		Yongxin Shi	Nanjing Univ. of Aeronautics and Astronautics	
14:00-14:10		SunA4.4	Kang Wu	Nanjing Univ. of Aeronautics and Astronautics	
444 <i>基于变旋翼转速的直升机发动机性能优化控制技术</i>			Shouzhao Sheng	Nanjing Univ. of Aeronautics and Astronautics	
Wei Luo	Nanjing Univ. of Aeronautics and Astronautics		15:00-15:10		SunA4.10
Shouzhao Sheng	Nanjing Univ. of Aeronautics and Astronautics		1074 <i>Nonlinear robust attitude tracking control of 3-DOF helicopter based on output feedback</i>		
Yongxin Shi	Nanjing Univ. of Aeronautics and Astronautics		Jingwei Yu	Univ. of Electronic Science and Technology of China	
14:10-14:20		SunA4.5	Chen Peng	Univ. of Electronic Science and Technology of China	
609 <i>基于 SQP 算法的倾转旋翼机过渡段最优控制分配</i>			Longteng Zhang	Univ. of Electronic Science and Technology of China	
Kang Wu	Nanjing Univ. of Aeronautics and Astronautics		Xiaohua He	China Airborne Missile Academy	
Shouzhao Sheng	Nanjing Univ. of Aeronautics and Astronautics		15:10-15:20		SunA4.11
Hang Dai	Nanjing Univ. of Aeronautics and Astronautics		1103 <i>基于动态逆 LQR 方法的高海况直升机着舰控制</i>		
Yuhua Ding	Nanjing Univ. of Aeronautics and Astronautics		Xuesong Hu	Northwestern Polytechnical Univ.	
14:20-14:30		SunA4.6	Ruoyan Hu	Northwestern Polytechnical Univ.	
620 <i>Control allocation strategy for compound helicopter in transition mode</i>			Aijun Li	Northwestern Polytechnical Univ.	
Yongxin Shi	Nanjing Univ. of Aeronautics and Astronautics		Biao Duan	Northwestern Polytechnical Univ.	
Changfei Cui	Nanjing Univ. of Aeronautics and Astronautics		15:20-15:30		SunA4.12
Wei Luo	Nanjing Univ. of Aeronautics and Astronautics		1119 <i>Tilt tri-rotor UAV attitude control in hover mode</i>		
Shouzhao Sheng	Nanjing Univ. of Aeronautics and Astronautics		Yan Ma	Beihang Univ.	
14:30-14:40		SunA4.7	Yingxun Wang	Beihang Univ.	
746 <i>Diagnosis and repair of speckle outliers based on fault tolerant least squares</i>			Jiang Zhao	Beihang Univ.	
Weihong Song	Xi'an Satellite Control Center		Zhihao Cai	Beihang Univ.	
Haoxue Li	Xi'an Satellite Control Center		Ningjun Liu	Beihang Univ.	
Junqiang Liu	State Key Lab of Astronautic Dynamics		SunA5 3rd Floor Meeting Room 306		
Jianhai Zhang	State Key Lab of Astronautic Dynamics		Agricultural US 三层会议室 306		
Dong Zhang	Xi'an Satellite Control Center		Chairs: Jian Chen		China Agricultural Univ.
14:40-14:50		SunA4.8	Xiongkui He		China Agricultural Univ.
942 <i>Analysis of flight trajectory model based on BADA</i>			13:30-13:40		SunA5.1
Chaoyi Sun	Tsinghua Univ.		222 <i>Method of locating the strike point on pest for laser control based on mask R-CNN</i>		
Bohang Liang	Tsinghua Univ.		Yajun Li	Beijing Academy of Agricultural and Forestry Sciences	
Bin Zhang	Tsinghua Univ.		Yang Xiang	Hunan Agriculture Univ.	
			Qingchun Feng	Beijing Research Center of Intelligent Equipment for Agriculture	
			13:40-13:50		SunA5.2
			355 <i>Exposure risk assessment of oil-powered single-rotor UAV in pear orchard</i>		
			Peng Qi	China Agricultural Univ.	
			Hecheng Wu	China Agricultural Univ.	

Shubo Wang	China Agricultural Univ.	Zhiqiang Guo	Beijing Academy of Agricultural and Forestry Sciences
Xiongui He	China Agricultural Univ.		
Yajia Liu	China Agricultural Univ.	14:40-14:50	SunA5.8
Changjian Yuan	China Agricultural Univ.	1130 Pear flower recognition based on YOLO v5s target detection model in complex orchard scenes	
Bowen Wu	China Agricultural Univ.	Qiang Liu	China Agricultural Univ.
13:50-14:00	SunA5.3	Shubo Wang	China Agricultural Univ.
774 Remote sensing image semantic segmentation based on fusion of Transformer and lightweight Deeplabv3+		Xiongui He	China agricultural Univ.
Yuanyang Cao	China Agricultural Univ.	Yajia Liu	China Agricultural Univ.
Jian Chen	China Agricultural Univ.	14:50-15:00	SunA5.9
Zhentao Xue	China Agricultural Univ.	1131 Design and experimental analysis of hot fog machine for anti freezing in orchard	
Zichao Zhang	China Agricultural Univ.	Hecheng Wu	China Agricultural Univ.
Gui Hu	China Agricultural Univ.	Shubo Wang	China Agricultural Univ.
14:00-14:10	SunA5.4	Xiongui He	China Agricultural Univ.
776 Multi-level transfer alignment method by using the inertial network		15:00-15:10	SunA5.10
Zhentao Xue	China Agricultural Univ.	1291 Study and experiment on the effect of fruit trees' volume by different travel direction and LiDAR installation height	
Jian Chen	China Agricultural Univ.	Limin Liu	China Agricultural Univ.
Yuanyang Cao	China Agricultural Univ.	Zhao Liang	Taishan Univ.
Zichao Zhang	China Agricultural Univ.	Xiongui He	China Agricultural Univ.
Xuzan Liu	China Agricultural Univ.	Yajia Liu	China Agricultural Univ.
14:10-14:20	SunA5.5	15:10-15:20	SunA5.11
789 基于双目仿鹰眼视觉的果园三维导航地图重建研究		1297 Intelligent control strategy of wind curtain type anti-drift sprayer based on LSSVM wind speed prediction and fuzzy control	
Zichao Zhang	China Agricultural Univ.	Zhao Liang	Taishan Univ.
Jian Chen	China Agricultural Univ.	Limin Liu	China Agricultural Univ.
Xuzan Liu	China Agricultural Univ.	Hao Ding	Taishan Univ.
Zhentao Xue	China Agricultural Univ.	Shubo Wang	China Agricultural Univ.
Yuanyang Cao	China Agricultural Univ.	15:20-15:30	SunA5.12
14:20-14:30	SunA5.6	1348 Research on environmental monitoring and prediction method of orchard frost based on wireless sensor network	
949 Application comparison of three UAVs in the control of pests and diseases of citrus in Guangxi		Hao Ding	Taishan Univ.
Xiangkai Ran	China Agricultural Univ.	Limin Liu	China Agricultural Univ.
Tian Li	China Agricultural Univ.	Zhao Liang	Taishan Univ.
Shaoqing Xu	China Agricultural Univ.	SunA6 3rd Floor Meeting Room 307	
Yuan Zhong	China Agricultural Univ.	Intelligence Control III 三层会议室 307	
Xiang Wang	China Agricultural Univ.	Chairs: Ziquan Yu	Nanjing Univ. of Aeronautics and Astronautics
Yuru Feng	China Agricultural Univ.	Yumin Zhang	Concordia Univ.
Jianli Song	China Agricultural Univ.	13:30-13:40	SunA6.1
14:30-14:40	SunA5.7	135 Fault-tolerant coverage control for satellite formation flying based on differential games	
1065 Robust ego-velocity estimate method based on GNSS and stereo visual sensor fusion in variable-rate application for agricultural vehicles		Yuan Ni	Nanjing Univ. of Aeronautics and Astronautics
Linhuang Zhang	Beijing Academy of Agricultural and Forestry Sciences	Hao Yang	Nanjing Univ. of Aeronautics and Astronautics
Ruirui Zhang	National Research Center of Intelligent Equipment for Agriculture	Bin Jiang	Nanjing Univ. of Aeronautics and Astronautics
Yan Yang	Beijing Academy of Agricultural and Forestry Sciences	13:40-13:50	SunA6.2
Danzhu Zhang	Beijing Academy of Agricultural and Forestry Sciences	506 Fixed-time dynamic surface fault-tolerant tracking control for	
Chenchen Ding	Beijing Academy of Agricultural and Forestry Sciences		
Liping Chen	Beijing Academy of Agricultural and Forestry Sciences		

<i>UAV with actuator fault</i>		Astronautics	
Shuaipeng Zheng	Henan Polytechnic Univ.	Bo Gao	Xi'an Satellite Control Center
Zhonghua Wu	Henan Polytechnic Univ.	Yanhua Zhang	Nanjing Univ. of Aeronautics and
13:50-14:00	SunA6.3	Astronautics	
562 <i>Fractional-order sliding-mode fault-tolerant control of unmanned aerial vehicles against actuator faults with time-delay</i>		Guili Xu	Nanjing Univ. of Aeronautics and
Ruifeng Zhou	Nanjing Univ. of Aeronautics and	Astronautics	
Ziquan Yu	Nanjing Univ. of Aeronautics and	14:50-15:00	SunA6.9
Youmin Zhang	Concordia Univ.	691 <i>Adaptive fault-tolerant control of a canard rotor/wing VTOL aircraft</i>	
14:00-14:10	SunA6.4	Dehai Zhu	Northwestern Polytechnical Univ.
563 <i>Nussbaum-based finite-time adaptive fault-tolerant tracking control against actuator-sensor faults and Input saturation</i>		Yinong Zhang	Northwestern Polytechnical Univ.
Yiwei Xu	Nanjing Univ. of Aeronautics and	Huimin Zhao	Northwestern Polytechnical Univ.
Ziquan Yu	Nanjing Univ. of Aeronautics and	Ban Wang	Northwestern Polytechnical Univ.
Fuyang Chen	Nanjing Univ. of Aeronautics and	Zhenghong Gao	Northwestern Polytechnical Univ.
Youmin Zhang	Concordia Univ.	15:00-15:10	SunA6.10
14:10-14:20	SunA6.5	884 <i>Spacecraft fault location method based on DSAN</i>	
635 <i>Vision-based autonomous landing of a quadrotor UAV on a double-layered nested landing marker</i>		Junjian Ren	Nanjing Univ. of Aeronautics and
Lingxia Mu	Xi'an Univ. of Technology	Astronautics	
Yuan Zhang	Xi'an Univ. of Technology	Dingchi Sun	Nanjing Univ. of Aeronautics and
Jing Xin	Xi'an Univ. of Technology	Astronautics	
Youmin Zhang	Concordia Univ.	Yuehua Cheng	Nanjing Univ. of Aeronautics and
14:20-14:30	SunA6.6	Astronautics	
650 <i>Distributed finite-time fault-tolerant cooperative control of multiple UAVs against thrust loss fault and external disturbances</i>		Yutian Zhou	Nanjing Univ. of Aeronautics and
Zhongyu Yang	Nanjing Univ. of Aeronautics and	Astronautics	
Ziquan Yu	Nanjing Univ. of Aeronautics and	Ze Wang	Nanjing Univ. of Aeronautics and
Youmin Zhang	Concordia Univ.	Astronautics	
Yuehua Cheng	Nanjing Univ. of Aeronautics and	15:10-15:20	SunA6.11
Guili Xu	Nanjing Univ. of Aeronautics and	984 <i>Ill-conditioned matrix problem and its solution in multi-constellation navigation and positioning of launch vehicle</i>	
14:30-14:40	SunA6.7	Wei Zhang	Xi'an Satellite Control Center
652 <i>Disturbance observer-based fault-tolerant control of tail-sitter UAV with second-order actuator dynamics</i>		Dong Zhang	Xi'an Satellite Control Center
Jiaxu Li	Nanjing Univ. of Aeronautics and	Jianhai Zhang	State Key Lab of Astronautic
Ziquan Yu	Nanjing Univ. of Aeronautics and	Dynamics	
Youmin Zhang	Concordia Univ.	Junqiang Liu	State Key Lab of Astronautic
14:40-14:50	SunA6.8	Dynamics	
690 <i>对地观测卫星姿态控制系统效能评估方法研究</i>		15:20-15:30	SunA6.12
Yin Cao	Nanjing Univ. of Aeronautics and	1195 <i>Adaptive neural network approximator-integrated fault detection strategy for electro-mechanical flight actuators</i>	
Yuehua Cheng	Nanjing Univ. of Aeronautics and	Zhenshu Yang	Jiangsu Aviation Technical College
		Qi Mao	Tianjin Univ.
		Xingchang Jin	Jiangsu Aviation Technical College
		Xiaoyu Li	Jiangsu Aviation Technical College
		SunA7 3rd Floor Meeting Room 308	
		Intelligent Guidance & Control III 三层会议室 308	
		Chairs: Bing Hua	Nanjing Univ. of Aeronautics and Astronautics
		Shengjun Zhong	Nanjing Univ. of Aeronautics and Astronautics

13:30-13:40		SunA7.1			Univ.
104 Adaptive RBFNN-based active fault-tolerant control for spacecraft formation flying system			Bing Xiao	Harbin Institute of Technology	
Rui Shu		Nanjing Univ. of Aeronautics and Astronautics	14:30-14:40		
Qingxian Jia		Nanjing Univ. of Aeronautics and Astronautics	SunA7.7		
Yule Gui		Nanjing Univ. of Aeronautics and Astronautics	569 Lateral attitude control of long endurance solar-powered UAV		
Huayi Li		Harbin Institute of Technology	Bo Wang		
13:40-13:50		SunA7.2	The First Aircraft Institute		
290 Formation configuration design and performance analysis under GMTI mission requirements			He Zhang		
Shengjun Zhong		Nanjing Univ. of Aeronautics and Astronautics	Tianli Ma		
Bing Hua		Nanjing Univ. of Aeronautics and Astronautics	The First Aircraft Institute		
Hong Zhang		Nanjing Univ. of Aeronautics and Astronautics	14:40-14:50		
13:50-14:00		SunA7.3	SunA7.8		
446 Research of UAV cluster motion based on swarm and artificial potential field fusion algorithm			747 Multi-step mutual information prediction for fire-spots tracking in active sensing of wildfires		
Zhiming Chen		Nanjing Univ. of Aeronautics and Astronautics	Yakai Wang		
Wenkai Jiang		Nanjing Univ. of Aeronautics and Astronautics	Beijing Institute of Technology		
Haiying Liu		Nanjing Univ. of Aeronautics and Astronautics	Pan Tang		
14:00-14:10		SunA7.4	Beijing Institute of Aerospace Systems Engineering		
450 Relative/absolute altitude fusion technology oriented to the complex environment of plateau airports			Fubiao Zhang		
Xiaowei Qu		Nanjing Univ. of Aeronautics and Astronautics	Zhaoshun Wang		
Yuting Dai		Nanjing Univ. of Aeronautics and Astronautics	Beijing Institute of Technology		
Zhimin Li		Nanjing Univ. of Aeronautics and Astronautics	Shuaipeng Lang		
Pin Lv		Nanjing Univ. of Aeronautics and Astronautics	14:50-15:00		
Jizhou Lai		Nanjing Univ. of Aeronautics and Astronautics	SunA7.9		
14:10-14:20		SunA7.5	772 The design of disturbance observer based controller of CRUAV for trajectory tracking		
527 Modeling and linear active disturbance rejection control of a new morphing quadrotor			Tianliu Wang		
Haosheng Sun		Nankai Univ.	National Univ. of Defense Technology		
Chunhui He		Nankai Univ.	Peng Li		
Qingxiang Wu		Nankai Univ.	National Univ. of Defense Technology		
He Chen		Hebei Univ. of Technology	Chi Peng		
Ning Sun		Nankai Univ.	National Univ. of Defense Technology		
14:20-14:30		SunA7.6	Hao Ding		
543 Supplement decision-making of operation hybrid dynamic system based on improved lanchester equation			National Univ. of Defense Technology		
Lingwei Li		Northwestern Polytechnical Univ.	15:00-15:10		
			SunA7.10		
			1144 Non-cooperative spacecraft detection based on deep learning under complex space environment		
			Shengxin Yu		
			Nanjing Univ. of Aeronautics and Astronautics		
			Yunhua Wu		
			Nanjing Univ. of Aeronautics and Astronautics		
			Haibo Guo		
			Shanghai Institute of Satellite Engineering		
			Weiwei Tian		
			Nanjing Univ. of Aeronautics and Astronautics		
			15:10-15:20		
			SunA7.11		
			1187 Dynamic modeling and stochastic feedback control of the space rigid-flexible manipulator		
			Dan Yu		
			Nanjing Univ. of Aeronautics and Astronautics		
			Mengna Liu		
			Nanjing Univ. of Aeronautics and Astronautics		
			15:20-15:30		
			SunA7.12		
			1252 Multi-arm space robot mission planning based on hierarchical task network		
			Xiaofeng Gao		
			Nanjing Univ. of Aeronautics and Astronautics		
			Yunhua Wu		
			Nanjing Univ. of Aeronautics and Astronautics		

Chengfei Yue	Harbin Institute of Technology, Shenzhen	Technology
Haibo Guo	Shanghai Institute of Satellite Engineering	China Academy of Launch Vehicle Technology
Yang Li	China Academy of Launch Vehicle Technology	China Academy of Launch Vehicle Technology
SunA8 4th Floor Meeting Room 401		
Autonomous Control III 四层会议室 401		
Chairs: Bin Li	Sichuan Univ.	
Yibo Fan	Sichuan Univ.	
13:30-13:40	SunA8.1	
241 <i>On predictor corrector guidance of hypersonic vehicle in glide segment</i>		
Si Chen	Xiamen Univ.	
Zonghua Sun	Xiamen Univ.	
Liaoni Wu	Xiamen Univ.	
13:40-13:50	SunA8.2	
327 <i>Collision-free model predictive control for periodic trajectory tracking of UAVs</i>		
Da Huo	Beijing Institute of Technology	
Li Dai	Beijing Institute of Technology	
Peizhan Wang	Beijing Institute of Technology	
Ruochen Xue	Beijing Institute of Technology	
Yuanqing Xia	Beijing Institute of Technology	
13:50-14:00	SunA8.3	
332 广义二型模糊系统的自组织规则生成方法		
Yibo Fan	Sichuan Univ.	
Tao Zhao	Sichuan Univ.	
14:00-14:10	SunA8.4	
337 <i>Morphing-aided maneuver control of morphing aircraft with variable wing span and sweep angle</i>		
Zijian Wang	Harbin Institute of Technology	
Mingzhe Hou	Harbin Institute of Technology	
Mingrui Hao	Harbin Institute of Technology	
14:10-14:20	SunA8.5	
520 基于预定义时间的四旋翼滑模控制		
Shang Huang	Sichuan Univ.	
Hao Liu	Sichuan Univ.	
Haiyan Tu	Sichuan Univ.	
14:20-14:30	SunA8.6	
575 <i>Nonlinear control of aerial-aquatic quadrotor for breaching a water surface</i>		
Dan Zheng	Univ. of Science and Technology of China	
Fei Liao	China Aerodynamics Research and Development Center	
Haibo Ji	Univ. of Science and Technology of China	
14:30-14:40	SunA8.7	
899 <i>Dynamics and analysis for gravitational effects on space multi-rigid-body system</i>		
Feng Zhang	China Academy of Launch Vehicle Technology	
Meng Diao	China Academy of Launch Vehicle Technology	
Shengbao Wu	China Academy of Launch Vehicle Technology	
Yang Li	China Academy of Launch Vehicle Technology	
14:40-14:50	SunA8.8	
900 <i>Integrated guidance and control design for orbit injection phase of launch vehicle</i>		
Meng Diao	China Academy of Launch Vehicle Technology	
Feng Zhang	China Academy of Launch Vehicle Technology	
Yang Li	China Academy of Launch Vehicle Technology	
Zhenqiang Qi	China Academy of Launch Vehicle Technology	
14:50-15:00	SunA8.9	
933 <i>Fast terminal sliding mode attitude control of quadrotor based on ADRC method</i>		
Jiaxiang Liu	Beijing Institute of Technology	
Tao Song	Beijing Institute of Technology	
Jianchuan Ye	Beijing Institute of Technology	
15:00-15:10	SunA8.10	
1132 <i>Robust decoupled controller design based on improved ESO of quadrotor in forward flight</i>		
Han Miao	Beijing Institute of Technology	
Tao Song	Beijing Institute of Technology	
Jianchuan Ye	Beijing Institute of Technology	
Yuru Bin	Beijing Institute of Technology	
15:10-15:20	SunA8.11	
1141 <i>Map aided visual-inertial integrated navigation for long range UAVs</i>		
Ke Liu	National Univ. of Defense Technology	
Xiaofeng He	National Univ. of Defense Technology	
Jun Mao	National Univ. of Defense Technology	
Lilian Zhang	National Univ. of Defense Technology	
Wenzhou Zhou	National Univ. of Defense Technology	
Hao Qu	National Univ. of Defense Technology	
Kaixin Luo	National Univ. of Defense Technology	
15:20-15:30	SunA8.12	
1336 <i>Optimal matching of multi-satellites configuration changes for on-orbit service</i>		
Han Wu	Shanghai Institute of Spaceflight Control Technology	
Fei Han	Shanghai Institute of Spaceflight Control Technology	
Yunsheng Fang	Shanghai Institute of Spaceflight Control Technology	
Yu Han	Shanghai Institute of Spaceflight Control Technology	
SunA9 4th Floor Meeting Room 406		
Perception & Localization 四层会议室 406		

Chairs: Xiaoshan Gao	Beihang Univ.	Minzhi Xiang	Information Engineering Univ.
Yueyang Ben	Harbin Engineering Univ.	Ming Li	Information Engineering Univ.
13:30-13:40	SunA9.1	14:40-14:50	SunA9.8
400 Aggregation of magnetic particles in a triangular oscillating magnetic field			
Peiran Zhao	Beihang Univ.	Shuaiyang Li	Harbin Engineering Univ.
Liang Yan	Beihang Univ.	Yuxin Zhao	Harbin Engineering Univ.
Xiaoshan Gao	Beihang Univ.	Yueyang Ben	Harbin Engineering Univ.
Suwan Bu	Beihang Univ.	GuanHao Wen	CETC 20nd Research Institute
Chris Gerada	Univ.of Nottingham	14:50-15:00	SunA9.9
13:40-13:50	SunA9.2	1098 Simulation and analysis of PMSM with segmented Halbach magnet array	
667 Environmentally robust laser-inertial SLAM System under multiple constraints			
Feng Yang	Northwestern Polytechnical Univ.	Lijia Ge	Beihang Univ.
Haotian Li	Northwestern Polytechnical Univ.	Liang Yan	Beihang Univ.
Hongxuan Song	Northwestern Polytechnical Univ.	Pengjie Xiang	Beihang Univ.
Baibing Jie	Northwestern Polytechnical Univ.	Yuchen Zhou	Beihang Univ.
13:50-14:00	SunA9.3	Ahmed	Arab Academy For Science Technology and Maritime Transport
732 Precision analysis and synthesis of seven axis redundant robot			
Gang Wang	Beijing Univ.of Posts and Telecommunications	15:00-15:10	SunA9.10
Jingchao Jia	Beijing Univ.of Posts and Telecommunications	1142 太阳信息辅助的脉冲相位估计方法及导航应用	
Jifu Wen	Beijing Univ.of Posts and Telecommunications	Yusong Wang	National University of Defense Technology
Chengyao Zhang	Beijing Univ.of Posts and Telecommunications	Yidi Wang	National University of Defense Technology
Honglei Che	China Work Safety Research Institute	Wei Zheng	National University of Defense Technology
14:00-14:10	SunA9.4	15:10-15:20	SunA9.11
814 Indoor location algorithm based on migration PSO-ELM in the absence of training			
Yifan Wu	BeiHang Univ.	1267 Six-phase permanent magnet synchronous motor with compound Halbach magnet array	
Wenhao Wang	BeiHang Univ.	Jin Wang	Beihang Univ.
Jing Zhang	BeiHang Univ.	Liang Yan	Beihang Univ.
14:10-14:20	SunA9.5		Ningbo Institute of Technology,
911 新型周转式轮腿机器人运动分析与步态规划研究			
Chengyao Zhang	Beijing Univ. of Posts and Telecommunications	Xiaocheng Wei	Beihang Univ.
Gang Wang	Beijing Univ. of Posts and Telecommunications	Zijian Jin	Beihang Univ.
Honglei Che	China Work Safety Research Institute	Bin Li	Beihang Univ.
Wenjun Li	Beijing Univ. of Posts and Telecommunications	15:20-15:30	SunA9.12
14:20-14:30	SunA9.6	1320 Kinematics modeling and analysis for mobile manipulator	
912 专利辅助下的一种冗余自由度机器人运动学标定方法			
	State Intellectual Property Office	Xiaoshan Gao	Beihang Univ.
Guanghui Wen	Patent Office	Liang Yan	Beihang Univ.
14:30-14:40	SunA9.7	Mengtong Ren	Beihang Univ.
944 基于状态变换卡尔曼滤波的 DVL/SINS 组合导航算法			
Kaidi Jin	Information Engineering Univ.	Honglei Che	China Academy of Safety Science and Technology
Hongzhou Chai	Information Engineering Univ.	SunA10 4th Floor Meeting Room 407	
Chuhan Su	Information Engineering Univ.	Autonomous Control V 四层会议室 407	
		Chairs: Qiang Shen	Shanghai Jiaotong Univ.
		Yuan Tian	Beihang Univ.
		13:30-13:40	SunA10.1
70 Determination technology and accuracy analysis of configuration parameters of ground system dual satellite formation based on navigation data			
		Kai Du	Xi'an Satellite Control Center
		Haiyue Li	Xi'an Satellite Control Center
		JiangPeng Liang	The Audit Office

YanRong Wang	Xi'an Satellite Control Center	664 Collision avoidance and tracking control of multi-spacecraft under input saturation	
Dan Wang	State Key Laboratory of Astronautical Dynamics	Zeyu Kang	Shanghai Jiao Tong Univ.
Jing Cao	Xi'an Satellite Control Center	Shufan Wu	Shanghai Jiao Tong Univ.
Shilu Shen	Xi'an Satellite Control Center	Yixin Huang	Shanghai Jiao Tong Univ.
13:40-13:50	SunA10.2	Yi Zhang	Shanghai Jiao Tong Univ.
87 Improving design of aerospace vehicle orbital transfer optimization with finite thrust based on Legendre pseudospectral method		Qiang Shen	Shanghai Jiao Tong Univ.
Lianghui Tu	Nanchang Hangkong Univ.	Xiaoliang Wang	Shanghai Jiao Tong Univ.
Chao Yan	Nanchang Hangkong Univ.	14:50-15:00	SunA10.9
Yuhao Wang	Nanchang Hangkong Univ.	1054 GTO maneuver trajectory optimization based on analytical model iteration	
Yang Yang	Nanchang Hangkong Univ.	Hanyu Zhang	National Univ. of Defense Technology
13:50-14:00	SunA10.3	Jin Zhang	National Univ. of Defense Technology
143 Fault-tolerant attitude control of spacecraft with dynamic pointing constraints		Xuan Huang	National Univ. of Defense Technology
Yuan Tian	Beihang Univ.	15:00-15:10	SunA10.10
Xiaodong Shao	Beihang Univ.	1061 State estimation of multi-AUV cooperative navigation system with uncertain observation loss	
Qinglei Hu	Beihang Univ.	Haoqian Huang	Hehai Univ.
Jianning Zheng	Hong Kong University of Science and Technology	Hao Wu	Hehai Univ.
14:00-14:10	SunA10.4	Shuang Zhang	Hehai Univ.
260 An attitude determination scheme for the nano star tracker		15:10-15:20	SunA10.11
Long Sun	Anhui Jianzhu Univ.	1121 Aerodynamic attitude control of ultra-low earth orbit satellite	
14:10-14:20	SunA10.5	Leyu Chen	Beihang Univ.
409 Research on fault tolerant control technology of highly reliable aerospace servo		Haichao Gui	Beihang Univ.
Hui Zhao	China Academy of Launch Vehicle Technology	Shaotao Xiao	Department of Spacecraft Technology
Zhishu Xu	Beijing Institute of Precision Mechatronics and Controls	15:20-15:30	SunA10.12
Chenhong Shi	China Academy of Launch Vehicle Technology	1285 Layout design of satellite star sensor fixed to rotation platform	
Chunqing Liu	Beijing Institute of Precision Mechatronics and Controls	Guiming Li	Beijing Institute of Control Engineering
Jinpeng Yang	Beijing Institute of Precision Mechatronics and Controls	Zhihui Li	Beijing Institute of Control Engineering
Zeyu Kang	Shanghai Jiao Tong Univ.	Rui Liu	China Academy of space technology
14:20-14:30	SunA10.6	Jianfu Zhang	Beijing Institute of Control Engineering
433 Sliding mode attitude control of flexible spacecraft with rotational components		Yushuang Wang	Beijing Institute of Control Engineering
Gaowang Zhang	Harbin Institute of Technology	Ao Chen	China Academy of Space Technology
Hua Zhai	Beijing Institute of Tracking and Communication Technology	SunA11	4th Floor Meeting Room 408
Haibo Guo	Shanghai Institute of Satellite Engineering	Intelligent Perception	四层会议室 408
Ming Liu	Harbin Institute of Technology	Chairs: Qi Dong	CETC China Academy of Electronics and Information Technology
14:30-14:40	SunA10.7	Yongbin Sun	Univ. of Science and Technology Beijing
460 Improved A* and fuzzy dynamic window based dynamic path planning for an UAV		13:30-13:40	SunA11.1
Siqi Wang	Shanghai Maritime Univ.	204 Flood monitoring from Sentinel-1 SAR images based on convolutional neural networks: A case study in Xinxiang city	
Bo Li	Shanghai Maritime Univ.	Cong Xie	Nanjing Research Institute of Electronics Technology
Chaolu Temuer	Shanghai Maritime Univ.	13:40-13:50	SunA11.2
14:40-14:50	SunA10.8	406 An autonomous navigation method based on artificial celestial observation using star sensors	

Yimeng Gao	China Academy of Launch Vehicle Technology	Peng Zhang	Avic Luoyang Institute of Electro-optical Equipment
Lan Yang	China Academy of Launch Vehicle Technology	Runhao Cui	Beihang Univ.
		Jinsong Yu	Beihang Univ.
13:50-14:00	Sun11.3	14:50-15:00	SunA11.9
483 面向区域搜索的机载组网雷达航迹优化方法		1047 Visibility detection based on dark channel prior and ResNet	
Huijie Zhu	CETC 36nd Research Institute	Zhihao Cai	Beihang Univ.
Ting Qin	Xidian Univ.	Shen Zhao	Beihang Univ.
Tao He	Xidian Univ.	Jiang Zhao	Beihang Univ.
Long Yan	Nanjing Marine Radar Institute	Yingxun Wang	Beihang Univ.
Junkun Yan	Xidian Univ.	15:00-15:10	Sun11.10
Hongwei Liu	Xidian Univ.	1048 Multi-camera moving object detection based on improved ORB feature matching	
14:00-14:10	SunA11.4	Zhihao Cai	Beihang Univ.
529 基于因子图的无人机视觉匹配定位		Yu Niu	Beihang Univ.
Hongfa Wan	Zhengzhou Univ.	Jiang Zhao	Beihang Univ.
14:10-14:20	SunA11.5	Yingxun Wang	Beihang Univ.
704 Robust cooperative guidance against maneuvering target based on distributed state estimation		15:10-15:20	Sun11.11
Zheng Zhang	Beihang Univ.	1154 RPnP pose estimation optimized by comprehensive learning pigeon-inspired optimization for autonomous aerial refueling	
Jianglong Yu	Beihang Univ.	Yongbin Sun	Univ. of Science and Technology Beijing
Xiwang Dong	Beihang Univ.	Xiaofeng Xia	Univ. of Science and Technology Beijing
Zhang Ren	Beihang Univ.	Long Xin	Beijing Institute of Astronautical Systems Engineering
14:20-14:30	SunA11.6	Wei He	Univ. of Science and Technology Beijing
759 Launch vehicle fusion positioning method based on optical angle information and GNSS		15:20-15:30	SunA11.12
Tiening Nie	State Key Lab of Astronautical Dynamics	1306 Hypersonic vehicle tracking algorithm based on virtual radar constructed by artificial intelligence	
ZiHu Lu	Xi'an Satellite Control Center	Biao Xu	Nanjing Univ. of Aeronautics and Astronautical
Hui Yu	State Key Lab of Astronautical Dynamics	Xuxin Zhu	Nanjing Univ. of Aeronautics and Astronautical
Jianhai Zhang	State Key Lab of Astronautical Dynamics	Shuang Li	Nanjing Univ. of Aeronautics and Astronautical
Jia Wang	Xi'an Satellite Control Center	Jinpeng Zhang	Luoyang Optoelectro Techonlogy Development Center
Jun Liu	State Key Lab of Astronautical Dynamics		
14:30-14:40	SunA11.7		
888 MOEA/D based multi-sensor collaborative task scheduling for space domain awareness		SunA12	4th Floor Meeting Room 411
Xi Long	Nationary Univ. of Defense Technology	Navigation Technology II	四层会议室 411
Weiwei Cai	Nationary Univ. of Defense Technology	Chairs: Yuhang Kang	Naval Aeronautical and Astronautical Univ.
Leping Yang	Nationary Univ. of Defense Technology	Xiuzhen Wu	Naval Station Univ.
Li Yang	Nationary Univ. of Defense Technology	13:30-13:40	SunA12.1
14:40-14:50	SunA11.8	360 有人机/无人机协同发展浅析	
1036 Real-time performance evaluation method for infrared system based on actual scene images		Qijie Chen	Naval Aviation Univ.
		Yuqiang Jin	Naval Aviation Univ.
		Zhicai Xiao	Naval Aviation Univ.
		Tinglong Yan	Naval Aviation Univ.
		13:40-13:50	SunA12.2
		481 一种基于 YOLO 的多无人机协同目标检测识别方法	
		Xiuzhen Wu	Naval Station Univ.

Huifeng Feng	Naval Station Univ.	Shaolei Zhou	Naval Aviation Univ.
Shi Yan	Naval Station Univ.	15:00-15:10	SunA12.10
Yahui Qi	Naval Station Univ.	842 Vision transformer with imformation bottleneck for fine-grained visual classification	
Ye Sun	Ningbo Univ.	Tong Su	CAS Shenzhen Institute of Advanced Technology
13:50-14:00	SunA12.3	Chengqun Song	CAS Shenzhen Institute of Advanced Technology
492 Two-channel CNN model for analog circuit fault diagnosis		Jun Cheng	CAS Shenzhen Institute of Advanced Technology
Yufeng Qin	Naval Aviation Univ.	15:10-15:20	SunA12.11
Xianjun Shi	Naval Aviation Univ.	852 基于深度扭曲的无监督深度学习视觉 SLAM	
Li Zhao	Naval Aviation Univ.	Chengqun Song	CAS Shenzhen Institutes of Advanced Technology
14:00-14:10	SunA12.4	Jun Cheng	CAS Shenzhen Institute of Advanced Technology
510 动态环境下基于改进 SegNet 的语义建图		Bo Zeng	CAS Shenzhen Institute of Advanced Technology
Guangxi Chen	Guilin Univ. Of Electronic Technology	Tong Su	CAS Shenzhen Institute of Advanced Technology
Bing Hong	CAS Shenzhen Institutes of Advanced Technology	Ke Zhang	CAS Shenzhen Institute of Advanced Technology
Qieshi Zhang	CAS Shenzhen Institutes of Advanced Technology	Qieshi Zhang	CAS Shenzhen Institute of Advanced Technology
Jun Cheng	CAS Shenzhen Institutes of Advanced Technology	15:20-15:30	SunA12.12
Yongjie Wang	Guangdong Lingfeng Hardware Equipment Technology Corporation	956 An improved inertial navigation assisted VSLAM navigation method	
Xianjia Yu	Foshan Supervision Testing Center of Quality and Metrology	Xiuzhen Wu	Naval Aeronautical Univ.
14:10-14:20	SunA12.5	Shi Yan	Naval Aeronautical Univ.
617 Deep clustering network with angular metric learning in navigation		Yahui Qi	Naval Aeronautical Univ.
Kangjian Shi	Zhejiang Univ. of Technology	Wei Liu	Naval Aeronautical Univ.
Yunhong Lu	Zhejiang Univ.	SunA13 4th Floor Meeting Room 415	
Pengyi Hao	Zhejiang Univ. of Technology	Control & Simulation I 四层会议室 415	
14:20-14:30	SunA12.6	Chairs: Minwen Wang	AVIC Xi'an Flight Automatic Control Research Institute
626 Heuristic semantic segmentation using the weights of local voxel structure		Huaxin Qiu	Beihang Univ.
Ziheng Zhang	Northeastern Univ.	13:30-13:40	SunA13.1
Lu Wang	Northeastern Univ.	298 面向 ADS-33F 品质规范设计的直升机多响应类型切换控制研究	
Qieshi Zhang	CAS Shenzhen Institutes of Advanced Technology	Renqing Zhai	AVIC Xi'an Flight Automatic Control Research Institute
Jun Cheng	CAS Shenzhen Institutes of Advanced Technology	Donghui Wang	AVIC Xi'an Flight Automatic Control Research Institute
14:30-14:40	SunA12.7	Lin Wang	AVIC Xi'an Flight Automatic Control Research Institute
648 Faster robotic arm movement planning via guided attenuation reward shaping.		Song Zhang	AVIC Xi'an Flight Automatic Control Research Institute
Xiaodong Han	Yunnan Univ.	Xinqing Gao	AVIC Xi'an Flight Automatic Control Research Institute
Dapeng Tao	Yunnan Univ.	13:40-13:50	SunA13.2
14:40-14:50	SunA12.8	452 The differential game cooperative guidance law for the single target	
656 Analysis and evaluation of MEMS-IMU attitude estimation algorithm		Minghu Tan	Northwestern Polytechnical Univ.
Keke Lu	Tsinghua Univ.		
Daquan Tang	Naval Aviation Univ.		
Kunhu Kou	Naval Aviation Univ.		
14:50-15:00	SunA12.9		
678 不确定通信网络下多智能体系统一致性控制			
Wei Liu	Naval Aviation Univ.		
Shi Yan	Naval Aviation Univ.		
Xibin Wang	Naval Aviation Univ.		
Ruitao Li	Naval Aviation Univ.		

Shen Hong	Northwestern Polytechnical Univ.	Haifeng Li	Civil Aviation Univ. of China
13:50-14:00	SunA13.3	Biao Lu	Nankai Univ.
461 Probabilistic method-based control design for attitude system of hypersonic vehicles		Yongshuai Wang	Nankai Univ.
Xiaohong Yang	Aerospace Institution	Jian Huang	Beijing Institute of Automatic Control Equipment
Zongyi Guo	Northwestern Polytechnical Univ.	14:50-15:00	SunA13.9
Ruimin Jiang	Northwestern Polytechnical Univ.	854 舰尾流下自动着舰进场动力补偿的仿真与分析	
Jianguo Guo	Northwestern Polytechnical Univ.	Xudong Huang	AVIC Xi'an Flight Automatic Control Research Institute
14:00-14:10	SunA13.4	Wanbo Zhu	AVIC Xi'an Flight Automatic Control Research Institute
514 基于能量管理的飞翼飞行器追踪轨迹设计		Zixia Wen	AVIC Xi'an Flight Automatic Control Research Institute
Tianpeng Huang	AVIC Xi'an Flight Automatic Control Research Institute	Wei Liu	AVIC Xi'an Flight Automatic Control Research Institute
Xiaoting Wang	AVIC Xi'an Flight Automatic Control Research Institute	15:00-15:10	SunA13.10
Yunyan Wu	AVIC Xi'an Flight Automatic Control Research Institute	986 A precise automatic landing control method based on the MPC-LQG algorithm	
Yueping Wang	AVIC Xi'an Flight Automatic Control Research Institute	Bing Wan	Naval Aviation Univ.
Wei Liu	AVIC Xi'an Flight Automatic Control Research Institute	Zishuang Pan	Naval Aviation Univ.
Wu Liu	AVIC Xi'an Flight Automatic Control Research Institute	Xichao Su	Naval Aviation Univ.
14:10-14:20	SunA13.5	Wei Han	Naval Aviation Univ.
564 折叠翼变体飞机建模与 L1 自适应控制器设计		Jie Wang	Naval Aeronautical Engineering Institute
Bicong Zhang	AVIC Xi'an Flight Automatic Control Research Institute	15:10-15:20	SunA13.11
Xiheng Zang	AVIC Xi'an Flight Automatic Control Research Institute	1160 Vertical and Lateral Trajectory Coupling Method in 4D Trajectory Prediction	
Longzhen Hu	AVIC Xi'an Flight Automatic Control Research Institute	Bohang Liang	Tsinghua Univ.
Erzhuo Niu	AVIC Xi'an Flight Automatic Control Research Institute	Chaoyi Sun	Tsinghua Univ.
14:20-14:30	SunA13.6	Bin Zhang	Tsinghua Univ.
594 基于侧滑角反馈的大型客机横航向控制技术研究		Kan Yang	Tsinghua Univ.
Shuxin Li	AVIC Xi'an Flight Automatic Control Research Institute	Qing Li	Tsinghua Univ.
Longzhen Hu	AVIC Xi'an Flight Automatic Control Research Institute	15:20-15:30	SunA13.12
Erzhuo Niu	AVIC Xi'an Flight Automatic Control Research Institute	1289 Attitude Control and Vibration Suppression Using PD+CPPF Compound Control Strategy	
14:30-14:40	SunA13.7	Yongsheng Wu	China Academy of Space Technology
624 Lateral control of distributed propulsion aircraft using deep reinforcement learning		Guangyuan Wang	China Academy of Space Technology
Wenjun Ni	Institute of Engineering Thermophysics, CAS	Kuai Yu	China Academy of Space Technology
Di Wu	Institute of Engineering Thermophysics, CAS	Xingsu Gao	China Academy of Space Technology
Xiaoping Ma	Institute of Engineering Thermophysics, CAS	Dong Wang	China Academy of Space Technology
14:40-14:50	SunA13.8	Meng Ge	China Academy of Space Technology
822 Optimized Disturbance Rejection Control for Flutter Suppression of a Benchmark Active Control Technology Wind-Tunnel Model		SunA14	4th Floor Meeting Room 418
Minnan Piao	Civil Aviation Univ. of China	Intelligent Decision	四层会议室 418
		Chairs: Yunbo Zhao	Univ. of Science and Technology of China
		Yuhui Wang	Nanjing Univ. of Aeronautics and Astronautics
		13:30-13:40	SunA14.1
		64 强化学习突防制导律研究	
		Yangkang Zhang	AVIC Xi'an Flight Automatic Control Research Institute
		13:40-13:50	SunA14.2
		139 Path Planning for maritime drones in a free space	

<i>environment based on reinforcement learning</i>		14:30-14:40	SunA14.7
Jianxun Jiang	Systems Engineering Research Institute	907 <i>TraNet: A Hybrid Deep Neural Network for Long-time-scale Aircraft Trajectory Prediction</i>	
Shunmin Li	Systems Engineering Research Institute	Xiaoyu Wang	Beijing Jiaotong Univ.
Ruihan Luo	Systems Engineering Research Institute	Jing Wang	Beijing Jiaotong Univ.
Wanda Zhang	China Shipbuilding Industry System Engineering Research Institute	JingRen Hou	Beijing Jiaotong Univ.
13:50-14:00 SunA14.3		Wei Xu	Beijing Jiaotong Univ.
262 <i>ConShuffleNet: An efficient convolutional neural network based on ShuffleNetV2</i>		Mingyang Song	Beijing Jiaotong Univ.
Huaming Qian	Harbin Engineering Univ.	Jian Li	The System Design Institute
Yipeng Zhou	Harbin Engineering Univ.	Mechanical-Electrical Engineering	
Peng Ding	Harbin Engineering Univ.	Liping Jing	Beijing Jiaotong Univ.
Shibao Feng	Harbin Engineering Univ.	14:40-14:50 SunA14.8	
14:00-14:10 SunA14.4		988 <i>基于 MADDPG 的无人机集群协同作战决策方法研究</i>	
541 <i>基于视觉的无人机自主着陆引导技术研究</i>		Lin Zhao	Univ. of Chinese Academy of Sciences
Bo Ma	AVIC Chengdu Aircraft Design and Research Institute	Ke Lu	Univ. of Chinese Academy of Sciences
Jiannan Zhang	CETC 52nd Research Institute	Jing Guo	Shenyang Aerospace Univ.
Chenggang Tao	AVIC Chengdu Aircraft Design and Research Institute	Chen Hong	Beijing Union Univ.
Tiancai Wan	AVIC Chengdu Aircraft Design and Research Institute	Xiancai Xiang	Univ. of Chinese Academy of Sciences
Zhongke Zhu	CETC 52nd Research Institute	Jian Xue	Univ. of Chinese Academy of Sciences
Hao Wei	AVIC Chengdu Aircraft Design and Research Institute	Yong Wang	Univ. of Chinese Academy of Sciences
14:10-14:20 SunA14.5		14:50-15:00 SunA14.9	
686 <i>Research on a New Configuration of Quadruiped Robot Based on Reinforcement Learning</i>		1037 <i>A Reinforcement Learning Method to Trajectory Design for Manned Lunar Mission via Reshaping Rewards</i>	
Bo Su	China North Vehicle Research Institute	Luyi Yang	National Univ. of Defense and Technology
Zhirui Wang	China North Vehicle Research Institute	Haiyang Li	National Univ. of Defense and Technology
Chong Tian	China North Vehicle Research Institute	Xingyong Li	National Univ. of Defense and Technology
Lei Jiang	Zhejiang Univ.	Zeyue Li	National Univ. of Defense and Technology
Wei Xu	China North Vehicle Research Institute	Lin Lu	National Univ. of Defense and Technology
Tianqi Qiu	China North Industries Group Corporation Limited	15:00-15:10 SunA14.10	
Tong Yan	China North Vehicle Research Institute	1256 <i>Game Decision of Multi-UAV Based on Improved Shark Smell Optimization Algorithm</i>	
14:20-14:30 SunA14.6		Lei Sun	Nanjing Univ. of Aeronautics and Astronautics
902 <i>Strategy optimization of imperfect information games based on NFSP with DDQN</i>		Yuhui Wang	Nanjing Univ. of Aeronautics and Astronautics
Tuo Qu	Beijing Normal Univ.	Tongle Zhou	Nanjing Univ. of Aeronautics and Astronautics
Qibin Zhou	Beijing Normal Univ.	Yu Kang	Univ. of Science and Technology of China
Jin Zhu	Univ. of Science and Technology of China	Yunbo Zhao	Univ. of Science and Technology of China
Fuqing Duan	Beijing Normal Univ.	15:10-15:20 SunA14.11	
		1276 <i>Delay-Based Feedback Formation Control for Unmanned</i>	

<i>Aerial Vehicles with Feedforward Components</i>		14:10-14:20	SunA15.5
Li Wang	Qingdao Univ. of Science and Technology	442 <i>On Finite-time Path Tracking Control of Underactuated UUV Based on Integral Terminal Sliding Mode</i>	
Yandong Zhao	Qingdao Univ. of Science and Technology	Wei Zhang	Harbin Engineering Univ.
Baolin Zhang	Qingdao Univ. of Science and Technology	Yiming Yang	Harbin Engineering Univ.
Hao Su	Ocean Univ. of China	Ximing Chen	Harbin Engineering Univ.
Jian Xue	Univ. of Chinese Academy of Sciences	14:20-14:30	SunA15.6
Yunbo Zhao	Univ. of Science and Technology of China	458 <i>Trajectory Tracking Control of Bionic Fish Based on CPG-Nonsingular Terminal Sliding Mode</i>	
15:20-15:30	SunA14.12	Wei Zhang	Harbin Engineering Univ.
1346 <i>Research on Autonomous Targeting Algorithm of UAV Ground Attack Based on Bombing Circle and Fuzzy Reinforcement Learning</i>		Yeijing Tang	Harbin Engineering Univ.
Xianrong Jing	Aviation Univ. of Air Force	Fantai Lin	Harbin Engineering Univ.
Zongcheng Ma	Airforce Engineering Univ.	Qingshuo Gong	Harbin Engineering Univ.
Ji Zhang	Aviation Univ. of Air Force	14:30-14:40	SunA15.7
Zhongxiang Tao	Aviation Univ. of Air Force	592 <i>Unmanned Underwater Vehicle path planning based on improved hybrid A* algorithm</i>	
SunA15 5th Floor Meeting Room 502		Wei Zhang	Harbin Engineering Univ.
US Swarm V 五层会议室 502		Zhaodian Chu	Harbin Engineering Univ.
Chairs: Xue Du	Harbin Engineering Univ.	14:40-14:50	SunA15.8
Zhaodong Sun	Harbin Engineering Univ.	874 输入时延与通信时延下 AUV 集群的牵制控制研究	
13:30-13:40	SunA15.1	Xue Du	Harbin Engineering Univ.
140 <i>An Underwater SLAM Approach Using Regularly Distributed Magnetic Beacons</i>		Zhaodong Sun	Harbin Engineering Univ.
Shuai Chang	Tianjin Univ.	Chenglong Xu	Harbin Engineering Univ.
Chengcheng Wan	Space Star Technology Co., Ltd	Zesheng Jin	Harbin Engineering Univ.
Dalong Zhang	Tianjin Univ.	14:50-15:00	SunA15.9
Hui Li	Tianjin Univ.	1212 <i>Research on USV course PID control based on improved Genetic Algorithm</i>	
Ye Lin	Space Star Technology Co., Ltd	Zhikun Tan	China Ship Scientific Research Center
13:40-13:50	SunA15.2	Naxin Wei	China Ship Scientific Research Center
268 <i>MPC Underwater Docking Control Method Study of UUV in Complex Interference</i>		Zhengfeng Liu	China Ship Scientific Research Center
Yanbin Teng	China Ship Scientific Research Center	15:00-15:10	SunA15.10
Changde Liu	China Ship Scientific Research Center	1288 <i>Parameters Setting of Firefly Algorithm</i>	
Zhengfeng Liu	China Ship Scientific Research Center	Chang Liu	Harbin Engineering Univ.
Longhui Zhang	China Ship Scientific Research Center	Yong Lu	Harbin Engineering Univ.
13:50-14:00	SunA15.3	Lina Zhang	Beijing Automation Control Equipment Institute
269 <i>Model Predictive Control and Thrust Allocation for Dynamic Positioning of Vessels</i>		Liyun Fan	Harbin Engineering Univ.
Changde Liu	China Ship Scientific Research Center	15:10-15:20	SunA15.11
Yanbin Teng	China Ship Scientific Research Center	1338 <i>Nonsingular Fast Terminal Sliding-mode Tracking Control for Hybrid Aerial Underwater Vehicles</i>	
Yufang Zhang	Wuxi Institute of Technology	Mingqing Lu	Harbin Engineering Univ.
Longhui Zhang	China Ship Scientific Research Center	Wenhua Wu	China Aerodynamics Research and Development Center
14:00-14:10	SunA15.4	Fei Liao	China Aerodynamics Research and Development Center
441 <i>Double closed-loop integral sliding mode control for underactuated UUV with uncertain dynamics</i>		Zhaolin Fan	China Aerodynamics Research and Development Center
Wei Zhang	Harbin Engineering Univ.	Beibei Xing	China Aerodynamics Research and Development Center
Yu Li	Harbin Engineering Univ.	SunA16 5th Floor Meeting Room 503	
Kaihang Zhang	Harbin Engineering Univ.	Multi-agent System I 五层会议室 503	

Chairs: Housheng Su	Huazhong Univ. of Science and Technology	Tao Song	Beijing Institute of technology
Zhuoyue Song	Beijing Institute of Technology	Jiang Wang	Beijing Institute of technology
13:30-13:40	SunA16.1	14:40-14:50	SunA16.8
113 <i>Research on air-to-air missile cooperative navigation technology based on GNSS</i>		1115 <i>基于采样控制的二阶多智能体系统二部一致性分析</i>	
Haibin Cheng	Chinese Aeronautical Establishment	Pin Wang	Hunan Univ. of Technology
Hao Lu	Luoyang Optoelectro Technology Development Center	Jinhui Zeng	Hunan Univ. of Technology
13:40-13:50	SunA16.2	14:50-15:00	SunA16.9
234 <i>Distributed dynamic event-triggered consensus of linear multi-agent systems with external disturbances</i>		1180 <i>Fire-fighting task simulation system of heterogeneous multi-UAVs based on ROS</i>	
Zhouming Cao	Beijing Institute of Technology	Hongji Zeng	Beihang Univ.
Zhuoyue Song	Beijing Institute of Technology	Chen Liu	Beihang Univ.
Housheng Su	Huazhong Univ. of Science and Technology	Kun Wu	Beihang Univ.
13:50-14:00	SunA16.3	Yanjie Min	Beihang Univ.
265 <i>Distributed primal-dual mirror dynamics for constraint-coupled optimization</i>		Kunpeng Li	Beihang Univ.
Jingwang Li	Huazhong Univ. of Science and Technology	15:00-15:10	SunA16.10
Suoxia Miao	Nanchang Institute of Technology	1315 <i>基于输出反馈的离散时间多智能体系统鲁棒包围控制</i>	
Housheng Su	Huazhong Univ. of Science and Technology	Nasi Wei	Hunan Univ. of Technology
14:00-14:10	SunA16.4	Chen Liu	Hunan Univ. of Technology
313 <i>Asynchronous multi-agent pareto optimization for diverse UAV maneuver strategy generation</i>		Qian Mi	Hunan Univ. of Technology
Tianze Zhou	Beijing Institute of Technology	Xueming Luo	Hunan Univ. of Technology
Fubiao Zhang	Beijing Institute of Technology	15:10-15:20	SunA16.11
Zhiwen Sun	Beijing Institute of Technology	1321 <i>Adaptive bipartite consensus of linear multi-agent systems under jointly connected topologies</i>	
Mingcheng Liu	Beijing Institute of Technology	Yi Yuan	Hunan Univ. of Technology
Zhaoshun Wang	Beijing Institute of Technology	Mohd Shamrie Sainin	Univ. Malaysia Sabah
14:10-14:20	SunA16.5	Lili Tang	Hunan Univ. of Technology
428 <i>Distributed communication based cooperative multi-aircraft attack guidance law</i>		15:10-15:20	SunA16.12
Zhongshi Lyu	Science and Technology on Complex System Control and Intelligent Agent Cooperation Laboratory	1349 <i>基于 MAPPO 算法的多无人机协同探路</i>	
14:20-14:30	SunA16.6	Longting Jiang	Air Force Engineering Univ.
559 <i>Robust coordinated tracking of saturated multi-agent systems: a dynamic input saturation reconstruction approach</i>		Ruixuan Wei	Air Force Engineering Univ.
Juan Qian	Nanjing Univ. of Posts and Telecommunications	Jiangyuan Tian	Air Force Engineering Univ.
Xiaoling Wan	Shanghai Jiao Tong Univ.	SunA17	5th Floor Meeting Room 505
Guoping Jiang	Nanjing Univ. of Posts and Telecommunications	GNC Education III	五层会议室 505
14:30-14:40	SunA16.7	Chairs: Ting Zhang	Beijing Institute of Technology
928 <i>Improved consensus-based bundle algorithm for multi-to-multi UAV interception</i>		Meijie Wu	Beijing Institute of Technology
Siyuan Yang	Beijing Institute of technology	13:30-13:40	SunA17.1
Shaoming He	Beijing Institute of technology	211 <i>适合小班教学的考查课实验评估探索</i>	
		Guohu Feng	National Univ. of Defense Technology
		Xingwei Li	National Univ. of Defense Technology
		Maosong Wang	National Univ. of Defense Technology
		13:40-13:50	SunA17.2
		212 <i>自主无人潜航器惯性组合导航虚拟仿真实验平台设计与实践</i>	
		Maosong Wang	National Univ. of Defense Technology
		Wenqi Wu	National Univ. of Defense Technology
		Guohu Feng	National Univ. of Defense Technology
		13:50-14:00	SunA17.3
		263 <i>多智能体协同任务规划仿真实验系统设计与实现</i>	
		Jia Zhang	Beijing Institute of Technology
		Bin Xin	Beijing Institute of Technology

Xuedong Zhao	Nanjing Univ. of Aeronautics and Astronautics	Shilu Shen	Xi'an Satellite Control Center
13:30-15:30	SunA18.6	Tiening Nie	State Key Laboratory of Astronautic Dynamics
219 基于飞行控制律软件的离散积分器建模研究		Jiayu Chang	Xi'an Satellite Control Center
Xiaoxiao Yin	AVIC First Aircraft Design and Research Institute	Jianhai Zhang	State Key Laboratory of Astronautic Dynamics
Delong Cui	AVIC First Aircraft Design and Research Institute	Weihong Song	Xi'an Satellite Control Center
13:30-15:30	SunA18.7	13:30-15:30	SunA18.12
309 A bit synchronization detection method for high dynamic and weak GNSS signal		466 Effectiveness evaluation of spacecraft orbit maneuver based on fuzzy comprehensive evaluation method	
Junwei Wu	China Academy of Engineering Physics	Jia Wang	Xi'an Satellite Control Center
Taotao Liang	China Academy of Engineering Physics	Shilu Shen	Xi'an Satellite Control Center
Chuan Wang	China Academy of Engineering Physics	Tiening Nie	State Key Laboratory of Astronautic Dynamics
Daicheng Qin	China Academy of Engineering Physics	Jianhai Zhang	State Key Laboratory of Astronautic Dynamics
13:30-15:30	SunA18.8	Jiayu Chang	Xi'an Satellite Control Center
343 Real-time performance analysis of the remote test system based on the network calculus		13:30-15:30	SunA18.13
Liang Qin	Naval Aeronautical Univ.	472 融合非线性收敛因子与变异准反射学习的哈里斯鹰优化算 法	
Xinhua Nie	Naval Aeronautical Univ.	Meijia Song	Sanming Univ.
Shi Yan	Naval Aeronautical Univ.	Heming Jia	Sanming Univ.
13:30-15:30	SunA18.9	Zhixing Lin	Sanming Univ.
367 改进灰狼算法的无人机路径规划		Qingxin Liu	Hainan Univ.
Yunping Liu	Nanjing Univ. of Information Science and Technology	13:30-15:30	SunA18.14
Huiru Zhu	Nanjing Univ. of Information Science and Technology	505 Synchronous vibration suppression of mscmg using a novel dual-channel phase-shift notch filter	
Weihua Fang	Nanjing Univ. of Information Science and Technology	Shicheng Yu	Beihang Univ.
13:30-15:30	SunA18.10	Shitong Wei	Beihang Univ.
449 Modal and strength analysis of high speed rotor based on magnetic bearing		13:30-15:30	SunA18.15
Junrui Shen	Ningbo Institute of Technology, Beihang Univ.	511 GPS/DME 数据融合定位算法在 PBN 中的应用	
Yinzhang Tong	Ningbo Institute of Technology, Beihang Univ.	Shuguang Sun	Civil Aviation Univ. of China
Liming Wang	Ningbo Institute of Technology, Beihang Univ.	Lugang Yuan	Civil Aviation Univ. of China
Zhenzhen Zhang	Ningbo Institute of Technology, Beihang Univ.	13:30-15:30	SunA18.16
Peng Tan	Beihang Univ.	560 基于 EARS 的系统工程需求写作实践方法	
Hongbin Li	Ningbo Institute of Technology, Beihang Univ.	Wenhao Zhu	AVIC Digital Corporation LTD.
Tong Yang	Ningbo Institute of Technology, Beihang Univ.	13:30-15:30	SunA18.17
13:30-15:30	SunA18.11	591 Design of attitude controller for hyper velocity projectile based on active disturbance rejection control	
465 Methods for reconstruction of abnormal velocity data on characteristic points based on historical data		Daiming Liu	Xidian Univ.
Jia Wang	Xi'an Satellite Control Center	Changwan Min	Xidian Univ.
		Jiashan Cui	Xidian Univ.
		Dongzhu Feng	Xidian Univ.
		13:30-15:30	SunA18.18
		613 Gaussian adaptive mutation pigeon-inspired optimized backstepping controller for aerial manipulation trajectory tracking	
		Lin Bin	Beihang Univ.
		Chen Wei	Beihang Univ.
		Haibin Duan	Beihang Univ.
		13:30-15:30	SunA18.19
		714 Design of airborne distributed service component platform	

<i>based on FACE</i>		<i>case study from air interdiction operation</i>	
Jiaqi Shi	Beihang Univ.	Yuchen Zhang	Chinese Aeronautical Establishment
Li Li	Beihang Univ.	13:30-15:30	SunA18.26
Jin Xiao	Beihang Univ.	898 基于 FMECA 的飞机防冰系统可靠性研究	
Xiaoguang Hu	Beihang Univ.	Zhen Wang	Binzhou Univ.
Qing Zhou	China National Aeronautical Radio Electronics Research Institute	Wei Hao	Binzhou Univ.
Boyang Song	Beihang Univ.	13:30-15:30	SunA18.27
13:30-15:30	SunA18.20	918 Review of formation control and cooperative guidance technology of multiple unmanned aerial vehicles	
778 飞行器管理系统架构及关键技术研究		Xinyu Liu	Beijing Electromechanical Engineering Research Institute
Kaijia Xue	AVIC Shenyang Aircraft Design and research institute	Mingrui Hao	Harbin Institute of Technology
Hao Liu	AVIC Shenyang Aircraft Design and research institute	13:30-15:30	SunA18.28
Jiping Han	AVIC Shenyang Aircraft Design and research institute	937 Guidance law design for varying-speed missile based on classic differential geometric principle	
Ruiyang Ban	AVIC Shenyang Aircraft Design and research institute	Yuanhe Liu	National Univ. of Defense Technology
Shuyi Liu	AVIC Shenyang Aircraft Design and research institute	Kebo Li	National Univ. of Defense Technology
13:30-15:30	SunA18.21	Xuesheng Qin	National Univ. of Defense Technology
801 Weapon target assignment based on improved symbiotic organisms search algorithm		Yangang Liang	National Univ. of Defense Technology
Zihao Lu	National Univ. of Defense Technology	13:30-15:30	SunA18.29
Hongwu Guo	National Univ. of Defense Technology	969 A generative adversarial network for image fusion via preserving texture information	
Shengmin Yue	National Univ. of Defense Technology	Dongxu Yang	National Univ. of Defense Technology
Chi Peng	National Univ. of Defense Technology	Yongbin Zheng	National Univ. of Defense Technology
13:30-15:30	SunA18.22	Peng Sun	National Univ. of Defense Technology
828 长航时协同航弹适用的视觉辅助 IMU 降噪算法		Wanying Xu	National Univ. of Defense Technology
Changwei Mi	Norinco Group Air Ammunition Research Institute Co. LTD	Di Zhu	National Univ. of Defense Technology
Xu Wu	Norinco Group Air Ammunition Research Institute Co. LTD	13:30-15:30	SunA18.30
Guangdi Luo	Norinco Group Air Ammunition Research Institute Co. LTD	971 Generation of lateral navigation transition path based on dubins method	
13:30-15:30	SunA18.23	Weijie Cai	Northwestern Polytechnical Univ.
877 基于视觉的机场无人驱鸟车路径规划算法研究		Guangwen Li	Northwestern Polytechnical Univ.
Rui Wang	Civil Aviation Univ. of China	Shaobo Zhai	Northwestern Polytechnical Univ.
Jinming Li	Civil Aviation Univ. of China	Feng Yang	Northwestern Polytechnical Univ.
Yulong Shi	Civil Aviation Univ. of China	Qiuling Jia	Northwestern Polytechnical Univ.
Hui Sun	Civil Aviation Univ. of China	13:30-15:30	SunA18.31
13:30-15:30	SunA18.24	979 The influence of proportions of different rotation modes on navigation in a dual-axis rotation scheme	
878 Two-step robust kalman filtering algorithm for X-ray pulsar navigation		Qihang Li	Beihang Univ.
Dingkun Mao	Rocket Force Univ. of Engineering	Kui Li	Beihang Univ.
Guangbin Cai	Xi'an Research Institute of High-Tech	Wenwei Liang	Beihang Univ.
Qian Yang	High Technology Research Institute	Huawei Hu	Beihang Univ.
13:30-15:30	SunA18.25	13:30-15:30	SunA18.32
894 System of systems architecting with knowledge graph: a		1019 Multi-output structure combined with separable	

<i>convolutional GRU model for aero-engine RUL prediction</i>		Ying Zhang	Univ. of Electronic Science and Technology of China
Tianyu Wang	Beijing Institute of Technology		
Baokui Li	Beijing Institute of Technology		
Qing Fei	Beijing Institute of Technology		
13:30-15:30	SunA18.33	13:30-15:30	SunA18.40
1030 基于物理规划的多星多站访问规划		1202 基于改进语义分割模型的压力钢管焊缝识别方法	
Liyao Wang	National Univ. of Defense Technology	Yulong Zhang	Shanghai Jiao Tong Univ.
Jin Zhang	National Univ. of Defense Technology	Peibo Li	Donghua Univ.
Hongxi Zhou	National Univ. of Defense Technology	Enguang Guan	Shanghai Maritime Univ.
Kemao Wang	National Univ. of Defense Technology	Yanzheng Zhao	Shanghai Jiao Tong Univ.
13:30-15:30	SunA18.34	Wei Cai	China Yangtze Power Co.,Ltd.
1042 AOA and AOS estimation of low-cost light and small UAV with simple sensor configuration		Dechang Hu	China Yangtze Power Co.,Ltd.
Shaobo Zhai	Northwestern Polytechnical Univ.	Jun Hu	China Yangtze Power Co.,Ltd.
Guangwen Li	Northwestern Polytechnical Univ.	13:30-15:30	SunA18.41
Qiuling Jia	Northwestern Polytechnical Univ.	1210 A review of unmanned aerial vehicle swarm task assignment	
Mingshan Hou	Northwestern Polytechnical Univ.	Qingyu Li	Tiangong Univ.
Sui Xu	Northwestern Polytechnical Univ.	Hui Xiong	Tiangong Univ.
13:30-15:30	SunA18.35	Yaozu Ding	Tiangong Univ.
1044 Multi-level feature enhancement and interaction network for remote sensing image semantic segmentation		Jinlong Song	Tiangong Univ.
Chonglei Sun	China Academy of Space Technology	Jinchen Liu	Tiangong Univ.
Yubo Yang	Academy of space information Systems	Yunjun Chen	Tiangong Univ.
13:30-15:30	SunA18.36	13:30-15:30	SunA18.42
1076 Multi-Sensor data consistency and fusion based on Jensen-Shannon divergence		1295 Modeling, simulation and control of electric fuel supply unit	
Duo Li	Beihang Univ.	Xinxin Tao	Northwestern Polytechnical Univ.
Junxiang Bai	Beihang Univ.	Yingqing Guo	Northwestern Polytechnical Univ.
Wenling Li	Beihang Univ.	Wanli Zhao	Northwestern Polytechnical Univ.
13:30-15:30	SunA18.37	13:30-15:30	SunA18.43
1097 Fast star detection algorithm based on dyadic wavelet transform		1305 Image classification of marine landmarks based on evidence theory	
Zhanglei Chen	Information Engineering Univ.	Nan Liu	Flight Automatic Control Research Institute
Bing Chen	ZhengZhou Institute of Information Science and Technology	Yongmei Cheng	Northwestern Polytechnical Univ.
Yong Zheng	Information Engineering Univ.	Xiaodong Zhang	AVIC Xi'an Flight Automatic Control Research Institute
Xiao Chen	Information Engineering Univ.	Shaohua Yang	Northwestern Polytechnical Univ.
13:30-15:30	SunA18.38	13:30-15:30	SunA18.44
1117 A high-precision dot matrix character recognition method in complex background		1323 新体制信号多径抑制算法综述	
Baoyan Mu	Shenyang Institute of Automation, CAS	Chen Shao	Nanjing Univ. of Aeronautics and Astronautics
Shuai Chen	Shenyang Institute of Automation, CAS	Qinghua Zeng	Nanjing Univ. of Aeronautics and Astronautics
Liang Gao	Shenyang Institute of Automation, CAS	Wenqi Qiu	Nanjing Univ. of Aeronautics and Astronautics
13:30-15:30	SunA18.39	Rui Xu	Nanjing Univ. of Aeronautics and Astronautics
1172 一种抗非视距误差的基于鸡群优化的三维定位算法		Fangdong Li	Nanjing Univ. of Aeronautics and Astronautics
Ting Ding	Univ. of Electronic Science and Technology of China	Bin Zhao	Nanjing Univ. of Aeronautics and Astronautics
He Huang	Univ. of Electronic Science and Technology of China	13:30-15:30	SunA18.45
		1352 Event-trigger-based global sliding mode control for a hypersonic morphing vehicle	
		Hao Zhang	National Univ. of Defense Technology

Peng Wang	National Univ. of Defense Technology	<i>guidance law</i>	
Guojian Tang	National Univ. of Defense Technology	Bailin Chen	Beijing Institute of Technology
Weimin Bao	China Aerospace Science and Technology Corporation	Shih-Yao Lin	Beijing Institute of Technology
		Guang Zhang	Beijing Institute of Technology
		Junzhi Li	China Ordnance Industry Test and Test Research Institute
SunB1	3rd Floor Meeting Room 301	Wei Wang	Beijing Institute of Technology
Control Theory II	三层会议室 301	16:50-17:00	SunB1.7
Chairs: Ke Zhang	Nanjing Univ. of Aeronautics and Astronautics	893	<i>基于干扰观测器的四旋翼无人机非奇异终端滑模控制</i>
Fuyang Chen	Nanjing Univ. of Aeronautics and Astronautics	Zhanzhan Li	Northeastern Univ.
15:50-16:00	SunB1.1	Yanhong Luo	Northeastern Univ.
158	<i>Event trigger based robust geometry controller design for the agile flight of the unmanned helicopter</i>	Zhen Wang	Northeastern Univ.
Xun Gu	Tianjin Univ.	17:00-17:10	SunB1.8
Bin Xian	Tianjin Univ.	901	<i>The synchronization of fractional-order chaotic systems based on event-triggered strategies</i>
16:00-16:10	SunB1.2	Liyuan Hou	Leshan Normal Univ.
336	<i>Fixed-time fault-tolerant control of quadrotor formation with sensor faults</i>	Shujun Long	Leshan Normal Univ.
Qiyang Miao	Nanjing Univ. of Aeronautics and Astronautics	Shilong Gao	Leshan Normal Univ.
Ke Zhang	Nanjing Univ. of Aeronautics and Astronautics	17:10-17:20	SunB1.9
Wanglei Cheng	Nanjing Univ. of Aeronautics and Astronautics	1043	<i>拟 VGG16 网络的航空传感器故障检测分类研究</i>
Bin Jiang	Nanjing Univ. of Aeronautics and Astronautics	Zhongzhi Li	Shenyang Aerospace Univ.
16:10-16:20	SunB1.3	Jinyi Ma	FuDan Univ.
517	<i>An ellipsoid-based interval estimation method for continuous-time switched systems</i>	Jianliang Ai	FuDan Univ.
Youdao Ma	Harbin Institute of Technology	Yiqun Dong	FuDan Univ.
Tiancheng Wang	Shanghai Institute of Satellite Engineering	17:20-17:30	SunB1.10
Zhenhua Wang	Harbin Institute of Technology	1055	<i>Identification of morphing aircraft aerodynamic parameters based on maximum likelihood method</i>
Yi Shen	Harbin Institute of Technology	Ruilin Lv	Beihang Univ.
16:20-16:30	SunB1.4	Yahui Liu	China Flight Test Establishment
525	<i>Window type detector for stealthy false data injection attack in cyber-physical systems</i>	Chaoyang Dong	Beihang Univ.
Chuanyi Ning	Beihang Univ.	17:30-17:40	SunB1.11
Zhiyu Xi	Beihang Univ.	1191	<i>A novel AGSTSMO-PPBFTC method for reentry HFV subject to attitude angle constraints and input delay</i>
16:30-16:40	SunB1.5	Zihui Tang	Nanjing Univ. of Aeronautics and Astronautics
731	<i>Fault modeling and diagnosis for spacecraft attitude control system using deep learning</i>	Fuyang Chen	Nanjing Univ. of Aeronautics and Astronautics
Pengyu Guo	Beihang Univ.	Jiaao Yang	Nanjing Univ. of Aeronautics and Astronautics
Qinglei Hu	Beihang Univ.	17:40-17:50	SunB1.12
Huaining Wu	Beihang Univ.	1203	<i>Barrier Lyapunov function-based adaptive fault-tolerant control for the large civil aircraft systems with uncertainties and faults</i>
Chao Duan	Beihang Univ.	Weizhi Lv	Shanghai Jiao Tong Univ.
Bin Chen	Beijing Institute of Control Engineering	Shiqian Liu	Shanghai Jiao Tong Univ.
Peng Zhang	China Academy of Space Technology	Zhenjie Ma	Shanghai Jiao Tong Univ.
16:40-16:50	SunB1.6	Xiaopeng Jia	Chinese Flight Test Institute
752	<i>Nonsingular fast terminal sliding mode based impact angle</i>	SunB2	3rd Floor Meeting Room 302
		Intelligent Computing	三层会议室 302
		Chairs: Yukai Zhu	Beihang Univ.
		Xingshuo Hai	Beihang Univ.
		15:50-16:00	SunB2.1

308 <i>Anchor-free and Pixel-wise Convolution for Visual Tracking</i>		Chao Chen	Science and Technology on Space
Yihang Luo	Luoyang Institute of Electro-Optical		Physics Laboratory
	Equipment	Junxiang Zhao	Science and Technology on Space
16:00-16:10	SunB2.2		Physics Laboratory
323 <i>A Parallelized Feature Analysis Method for Remote Sensing Images</i>		17:00-17:10	SunB2.8
Ning Kang	Beijing Aerospace Automatic Control	905 <i>Group object trajectories extraction in drone-based videos with dynamic background</i>	
	Research Institute	Aitong Ma	National Univ. of Defense Technology
Yuecheng Liu	Beijing Aerospace Automatic Control	Helu Zhou	National Univ. of Defense Technology
	Research Institute	Zhaowei Ma	National Univ. of Defense Technology
16:10-16:20	SunB2.3	Xudong Li	National Univ. of Defense Technology
639 <i>Distributed feature reduction signal sorting algorithm</i>		Yifeng Niu	National Univ. of Defense Technology
Liangtian Wan	Dalian Univ. of Technology	17:10-17:20	SunB2.9
Jinjing Wang	Dalian Univ. of Technology	1014 <i>A pedestrian gait recognition method driven by inertial data</i>	
Lu Sun	Dalian Maritime Univ.	Xiaochun Tian	Beijing Automation Control
Xianpeng Wang	Hainan Univ.		Equipment Institute
Cunbo Lu	Information Science Academy China	Xinghang Luo	Beijing Automation Control
	Electronics Technology Group		Equipment Institute
	Corporation	Lina Zhang	Beijing Automation Control
16:20-16:30	SunB2.4		Equipment Institute
653 <i>Boundary-aware transformer-UNet for coronary vessel segmentation</i>		17:20-17:30	SunB2.10
Jin Xiao	Beihang Univ.	1209 <i>Augmenting object detection in adverse conditions with polarization-encoded images</i>	
Jinglong Cao	Beihang Univ.	Yuanbo Hao	National Univ. of Defense Technology
Xiaoguang Hu	Beihang Univ.	Xuesong Wu	National Univ. of Defense Technology
Hao Jiang	Beihang Univ.	Jun Mao	National Univ. of Defense Technology
Tianyou Chen	Beihang Univ.	Xiaofeng He	National Univ. of Defense Technology
Shaojie Wang	Beihang Univ.	Wenqi Wu	National Univ. of Defense Technology
16:30-16:40	SunB2.5	Hao Qu	National Univ. of Defense Technology
675 <i>High availability design of avionics system architecture based on K3s</i>		17:30-17:40	SunB2.11
Yuan Zhang	Beihang Univ.	1263 <i>NeRFE: free view synthesis for event data</i>	
Jin Xiao	Beihang Univ.	Bo Zhang	Tsinghua Univ.
Xiaoguang Hu	Beihang Univ.	Yuqi Han	Tsinghua Univ.
Qing Zhou	China National Aeronautical Radio	Jinli Suo	Tsinghua Univ.
	Electronics Research Institute	Qionghai Dai	Tsinghua Univ.
16:40-16:50	SunB2.6	17:40-17:50	SunB2.12
848 <i>Research on the selective maintenance decision of equipment subject to competing causes of failure</i>		1310 <i>Velocity control of near space vehicle based on enhanced pigeon-inspired optimization</i>	
Linhu Cong	Naval Aeronautical and Astronautical	Meng Liu	Beihang Univ.
	Univ.	Qiang Feng	Beihang Univ.
Zhen Wang	Naval Aeronautical and Astronautical	Xingshuo Hai	Beihang Univ.
	Univ.	Yi Ren	Beihang Univ.
Chenchen Zhang	Dalian Maritime Univ.	Dongming Fan	Beihang Univ.
16:50-17:00	SunB2.7	SunB3 3rd Floor Meeting Room 303	
869 <i>Improved modified MUSIC algorithm based on virtual sensor array elements</i>		GNC (Spacecraft) IV 三层会议室 303	
Baoliang Sun	Science and Technology on Space	Chairs: Hao Liu	Beihang Univ.
	Physics Laboratory	Liang Yang	Beihang Univ.
Yuguang Song	Science and Technology on Space	15:50-16:00	SunB3.1
	Physics Laboratory	556 <i>Distributed fault-tolerant attitude consensus control for multiple satellites</i>	
Kai Xue	Science and Technology on Space	Ming Cheng	Beihang Univ.
	Physics Laboratory	Linbo Wang	Beijing Institute of Electronic System

Yu Tian	Beijing Institute of Electronic System	Engineering	1032 高超声速飞行器具有预定时间收敛性和冲击角约束的时变滑模制导律	
		Engineering	Chengxin Zhang	Beijing Institute of Technology
Hao Liu	Beihang Univ.		Yongzhi Sheng	Beijing Institute of Technology
16:00-16:10	SunB3.2		Jiahao Gan	Beijing Institute of Technology
777 航天器编队重构能量最优控制形式研究			17:10-17:20	SunB3.9
Chongchong Wang	Beihang Univ.		1034 可变弹道多约束滑模制导律设计	
Xiang Li	Beihang Univ.		Jiahao Gan	Beijing Institute of Technology
Liang Yang	Beihang Univ.		Yongzhi Sheng	Beijing Institute of Technology
16:10-16:20	SunB3.3		Chengxin Zhang	Beijing Institute of Technology
807 Formation control for multiple underactuated quadrotor systems			17:20-17:30	SunB3.10
Wanbing Zhao	Beihang Univ.		1038 Analysis and evaluation of onboard GNSS data quality for TH-4 satellite	
Hao Liu	Beihang Univ.		Yanan Fang	State Key Laboratory of Astronautic Dynamics
Qing Gao	Beihang Univ.		Chong Wang	State Key Laboratory of Astronautic Dynamics
Ming Cheng	Beihang Univ.		Jingyan Wang	State Key Laboratory of Astronautic Dynamics
16:20-16:30	SunB3.4		Bin Liu	State Key Laboratory of Astronautic Dynamics
832 Ascent trajectory design method for air-breathing combined power hypersonic vehicle			Zhibin Zhang	State Key Laboratory of Astronautic Dynamics
Jinlong Huang	Nanjing Univ. of Aeronautics and Astronautics		17:30-17:40	SunB3.11
Chunzhen Sun	Nanjing Univ. of Aeronautics and Astronautics		1292 Finite-time control for combination spacecraft attitude based on LESO of auxiliary system	
Wei Feng	Nanjing Univ. of Aeronautics and Astronautics		Xiao Han	Harbin Institute of Technology
16:30-16:40	SunB3.5		Lifan Zhou	Harbin Institute of Technology Harbin
890 Elastic adaptive stability control technology of launch vehicle			Guangfu Ma	Institute of Technology
Menghan Shao	Beijing Aerospace Automatic Control Research Institute		Xixuan Chen	Shandong Univ.
Hao Pan	Academy of Mathematics and Systems Science, CAS		17:40-17:50	SunB3.12
Guanghui Wang	Beijing Aerospace Automatic Control Research Institute		1314 大气层内助推段广义标脱靶量解析制导律	
Zhengyu Song	China Academy of Launch Vehicle Technology		Shilei Zhao	Beihang Univ.
16:40-16:50	SunB3.6		Liang Yang	Beihang Univ.
972 An optimal design of longitudinal trajectory for RLV in TAEM phase based on PSO			Wanchun Chen	Beihang Univ.
Yunyu Bai	Northwestern Polytechnical Univ.		SunB4 3rd Floor Meeting Room 305	
Guangwen Li	Northwestern Polytechnical Univ.		GNC (Aircraft) IV 三层会议室 305	
Shaobo Zhai	Northwestern Polytechnical Univ.		Chairs: Xinqing Gao	AVIC Xi'an Flight Automatic Control Research Institute
Zenan Qin	Northwestern Polytechnical Univ.		Shuguang Zhang	Beihang Univ.
Qiuling Jia	Northwestern Polytechnical Univ.		15:50-16:00	SunB4.1
16:50-17:00	SunB3.7		152 Stable task allocation with simulated annealing in taxi ride-hailing services	
973 Design and optimization of ascent trajectory for a novel HV based on APSO algorithm			Jingwei Lv	Beihang Univ.
Sui Xu	Northwestern Polytechnical Univ.		Ziyu Wei	Beihang Univ.
Guangwen Li	Northwestern Polytechnical Univ.		Shuzhen Yao	Beihang Univ.
Qiuling Jia	Northwestern Polytechnical Univ.		Huobin Tan	Beihang Univ.
Shaobo Zhai	Northwestern Polytechnical Univ.		16:00-16:10	SunB4.2
Qizheng Li	Northwestern Polytechnical Univ.		226 Multi-resolution trajectory optimization of eVTOL aircraft using capacity collocation	
17:00-17:10	SunB3.8		Mingkai Wang	Beihang Univ.
			Shuguang Zhang	Beihang Univ.
			Florian Holzapfel	Technical Univ. of Munich

16:10-16:20	SunB4.3	<i>method for eVTOL application</i>	
267 Model-based design and evaluation approach of redundant electro-mechanical actuator control architecture for eVTOL		Mingjun Zhao	Beihang Univ.
Ruichen He	Technical Univ. of Munich	Mingkai Wang	Beihang Univ.
Hannes Hofsaess	Technical Univ. of Munich	Shuguang Zhang	Beihang Univ.
Shuguang Zhang	Beihang Univ.	17:30-17:40	SunB4.11
Florian Holzapfel	Technical Univ. of Munich	1183 Influence of wing damage on lateral flying qualities of fly-by-wire aircraft	
16:20-16:30	SunB4.4	Haipeng Yin	Beijing Institute of Space Long March Vehicle
485 Kinematics and stability analysis of a hexapod robot with backbone joint		Pinghui Jia	Beijing Institute of Space Long March Vehicle
Qingyuan Xu	Beihang Univ.	Wei Li	Beijing Institute of Space Long March Vehicle
Jing Zhang	Beihang Univ.	Xuguo Qin	Beijing Institute of Space Long March Vehicle
Zhanggang Lyu	Beijing Aerospace Automatic Control Institute	Yipeng Liu	Beihang Univ.
Qiang Zhou	Beihang Univ.	Ting Yue	Beihang Univ.
Haosong Yue	Beihang Univ.	Lixin Wang	Beihang Univ.
Weihai Chen	Beihang Univ.	17:40-17:50	SunB4.12
16:30-16:40	SunB4.5	1302 Equilibrium and stability analysis of damaged aircraft using attainable equilibrium sets	
601 Online parameter estimation of the B-Matrix of a quadcopter in time- and frequency-domain		Xu Wang	China Aerodynamics Research and Development Center
Simon Hafner	Technical Univ. of Munich	Fei Cen	China Aerodynamics Research and Development Center
Barzin Hosseini	Technical Univ. of Munich	Zheng Gong	Nanjing Univ. of Aeronautics and Astronautics
Xiang Fang	Technical Univ. of Munich		
Florian Holzapfel	Technical Univ. of Munich		
16:40-16:50	SunB4.6	SunB5	3rd Floor Meeting Room 306
908 Application of single point calibration algorithm of optical velocimeter in SINS/VEL vehicle gravimetry		GNC Technology	三层会议室 306
Guowei Pan	National Univ. of Defense Technology	Chairs: Di Liu	Beihang Univ.
Bainan Yang	National Univ. of Defense Technology	Guochang Zhang	Harbin Engineering University
Yan Guo	National Univ. of Defense Technology	15:50-16:00	SunB5.1
Ruihang Yu	National Univ. of Defense Technology	105 EMD noise reduction method of MEMS gyroscope based on Chi-square detection	
Zhiming Xiong	National Univ. of Defense Technology	Ming Liu	Naval Submarine Academy
16:50-17:00	SunB4.7	Jinhui Liu	Naval Submarine Academy
988 Energy-efficient incremental control allocation for transition flight via quadratic programming		Jiayun Zou	Naval Submarine Academy
Zhidong Lu	Technical Univ. of Munich	Yifan Yu	Naval Submarine Academy
Hangxu Li	Technical Univ. of Munich	Yanfeng Wu	Naval Submarine Academy
Ruichen He	Technical Univ. of Munich	16:00-16:10	SunB5.2
Florian Holzapfel	Technical Univ. of Munich	160 A novel three-dimensional train safe braking model based on train-to-train communication	
17:00-17:10	SunB4.8	Jie Wang	Beihang Univ.
993 Research on the model-based analysis of eVTOL UML-2 functional requirements and performance requirements		Jin Xiao	Beihang Univ.
Yingshan Huang	Beihang Univ.	Xiaoguang Hu	Beihang Univ.
Shuguang Zhang	Beihang Univ.	16:10-16:20	SunB5.3
Nana Chu	The Hong Kong Polytechnic Univ.	378 Attitude estimation algorithm for flapping wing micro air vehicle in strong vibration environment	
17:10-17:20	SunB4.9	Zeyan Wu	Beihang Univ.
1002 Comparative research on improving continuous mining machine attitude determination ability		Shaopeng Dong	Beihang Univ.
Changsuo Yuan	CHN Energy Shendong Coal Group Co., Ltd.	Chengbin Tong	Beihang Univ.
17:20-17:30	SunB4.10	Longfei Zhao	Beihang Univ.
1031 Hybrid RRT*-Gauss pseudospectral trajectory planning		Lin Chen	Beihang Univ.

Mei Yuan	Beihang Univ.
16:20-16:30	SunB5.4
379 <i>Launch time sequence planning for ballistic missiles based on improved PSO algorithm</i>	
Zhuoqiao Yang	Beijing Institute of Technology
Xiangdong Liu	Beijing Institute of Technology
Haikuo Liu	Beijing Institute of Technology
16:30-16:40	SunB5.5
390 <i>Geometric adaptive hierarchical control for quadrotor with mass center offset and unknown inertial parameters</i>	
Lidan Xu	Beihang Univ.
Hao Lu	Beihang Univ.
16:40-16:50	SunB5.6
534 <i>Adaptive optimal control method for hypersonic variable sweep vehicle</i>	
Cunyu Bao	National Univ. of Defense Technology
Hao Zhang	National Univ. of Defense Technology
Peng Wang	National Univ. of Defense Technology
Guojian Tang	National Univ. of Defense Technology
16:50-17:00	SunB5.7
682 <i>Bionic flapping wing bending and twisting coupled motion modeling</i>	
Chengbin Tong	Beihang Univ.
Mei Yuan	Beihang Univ.
Longfei Zhao	Beihang Univ.
Shaopeng Dong	Beihang Univ.
Zeyan Wu	Beihang Univ.
Zhaotong Chen	Beihang Univ.
17:00-17:10	SunB5.8
766 <i>Hemispherical resonant gyroscope signal denoising by CEEMDAN-WPLP</i>	
Longkang Chang	Harbin Institute of Technology
Guochang Zhang	Harbin Engineering University
Ya Zhang	Harbin Institute of Technology
Wei Gao	Harbin Institute of Technology
Jianxiong Wei	Harbin Institute of Technology
Jianbo Shao	Harbin Institute of Technology
Pan Jiang	Tencent
17:10-17:20	SunB5.9
932 <i>Research on composite guidance law based on improved dynamic surface control</i>	
Peng Zhang	China Air-borne Missile Academy
Hao Lu	China Air-borne Missile Academy
Wanli Zhang	LuoYang Normal Univ.
Shutang Fu	China Air-borne Missile Academy
17:20-17:30	SunB5.10
960 <i>Cooperative trajectory shaping guidance law for multiple missiles</i>	
GuangYu Yang	Northwestern Polytechnical Univ.

Yangwang Fang	Northwestern Polytechnical Univ.
Wenxing Fu	Northwestern Polytechnical Univ.
Zhikai Wang	Northwestern Polytechnical Univ.
Wenhui Ma	Northwestern Polytechnical Univ.
17:30-17:40	SunB5.11
1092 <i>ESO-MPC based attitude control of coaxial rotorcraft UAV during blanket radar jamming</i>	
You Duan	Northwestern Polytechnical Univ.
Wenbi Zhao	Northwestern Polytechnical Univ.
Yaohong Qu	Northwestern Polytechnical Univ.
17:40-17:50	SunB5.12
1303 <i>Autonomous balance of wheel-legged robot based on backstepping sliding mode control</i>	
Kang Song	Beijing Univ. of Posts and Telecommunications
Qingxuan Jia	Beijing Univ. of Posts and Telecommunications
Gang Chen	Beijing Univ. of Posts and Telecommunications
Tong Li	Beijing Univ. of Posts and Telecommunications
SunB6 3rd Floor Meeting Room 307	
Intelligence Control IV 三层会议室 307	
Chairs: Jia Song	Beihang Univ.
Fenghua He	Harbin Institute of Technology
15:50-16:00	SunB6.1
482 <i>A hybrid method for online safe trajectory generation in quadrotor flight</i>	
Yu Ding	Beijing Institute of Technology
Fubiao Zhang	Beijing Institute of Technology
Defu Lin	Beijing Institute of Technology
Mingcheng Liu	Beijing Institute of Technology
16:00-16:10	SunB6.2
700 <i>Real-time trajectory planning for hypersonic vehicle with dynamic no-fly zone constraints</i>	
Xiaowei Xu	Beihang Univ.
Jia Song	Beihang Univ.
Kai Zhao	Beihang Univ.
Xindi Tong	Beihang Univ.
Yanxue Zhang	China Academy of Launch Vehicle Technology
16:10-16:20	SunB6.3
791 <i>An algorithm of complete coverage path planning based on improved DQN</i>	
Liu Yang	Shanghai Ocean Univ.
Bowen Xing	Shanghai Ocean Univ.
Zhaoyi Zhang	Shanghai Ocean Univ.
Lihong Li	China National Shipbuilding Corporation Limited
16:20-16:30	SunB6.4
857 <i>Autonomous guidance reconfiguration for the thrust drop fault of a multi-satellite launch mission</i>	
Cong Wang	Beijing Aerospace Automatic

	Control Institute	
Zhengyu Song	China Academy of Launch Vehicle Technology	
16:30-16:40	SunB6.5	
867 Application of improved ant colony algorithm in path planning of underwater mechanic		
Yuanxin Pei	Jiangsu Univ. of Science and Technology	
16:40-16:50	SunB6.6	
970 Dynamic generation strategy for the 4D continuous descent approach vertical profile		
Feng Yang	Northwestern Polytechnical Univ.	
Guangwen Li	Northwestern Polytechnical Univ.	
Qiuling Jia	Northwestern Polytechnical Univ.	
Weijie Cai	Northwestern Polytechnical Univ.	
Shaobo Zhai	Northwestern Polytechnical Univ.	
16:50-17:00	SunB6.7	
976 改进大猩猩部队优化的无人机三维路径规划		
Heming Jia	Sanming Univ.	
Chenghao Lu	Sanming Univ.	
Song Long	Sanming Univ.	
Qingxin Liu	Hainan Univ.	
Di Wu	Sanming Univ.	
17:00-17:10	SunB6.8	
1000 Intelligent control and economic optimization of ship energy storage system		
Yongshuang Qi	Jiangsu Univ. of Science and Technology	
Pengfei Zhi	Jiangsu Univ. of Science and Technology	
Wanlu Zhu	Jiangsu Univ. of Science and Technology	
17:10-17:20	SunB6.9	
1206 Generation and optimization of robust trajectory for tilting quadrotor		
Wei Zhang	Harbin Institute of Technology	
Ruoqiao Guan	Harbin Institute of Technology	
Kailun Cui	Harbin Institute of Technology	
Junjie Gao	Harbin Institute of Technology	
Fenghua He	Harbin Institute of Technology	
17:20-17:30	SunB6.10	
1208 Disturbance rejection LPV control of morphing aircraft based on extended state observer		
Yizheng Li	Beijing Institute of technology	
Junhui Liu	Beijing Institute of technology	
Jiayuan Shan	Beijing Institute of technology	
Chunyan Wang	Beijing Institute of technology	
Yadong Chen	Beijing Institute of technology	
17:30-17:40	SunB6.11	
1222 改进分组教学优化算法的无人机三维路径规划		
Di Wu	Sanming Univ.	
Heming Jia	Sanming Univ.	

Shanglong Li	Sanming Univ.
Honghua Rao	Sanming Univ.
Changsheng Wen	Sanming Univ.
Zhuo Wang	Sanming Univ.
17:40-17:50	SunB6.12
1287 Entry trajectory optimization satisfying geographic constraints	
Jiang Lou	Xi'an Institute of Modern Control Technology
Peng Wang	Xi'an Institute of Modern Control Technology
Xiaobo Gao	Xi'an Institute of Modern Control Technology
Ruochao Huang	Xi'an Institute of Modern Control Technology
Hao Qiao	Xi'an Institute of Modern Control Technology
Yao Zhang	Xi'an Institute of Modern Control Technology
SunB7 3rd Floor Meeting Room 308	
Intelligent Guidance & Control IV 三层会议室 308	
Chairs: Yao Zou	Univ. of Science and Technology Beijing
Ziyu Wang	Beihang Univ.
15:50-16:00	SunB7.1
205 STT/BTT control design of plane-symmetry vehicle in diving phase	
Zhengyou Wen	Xiamen Univ.
Zonghua Sun	Xiamen Univ.
Liaoni Wu	Xiamen Univ.
16:00-16:10	SunB7.2
293 Optimal cooperative interception method based on the pursuit-evasion problem for multiple missiles	
Xiang Ma	Nanjing Univ. of Science and Technology
Keren Dai	Nanjing Univ. of Science and Technology
Xiaofeng Wang	Beijing Institute of Technology
He Zhang	Nanjing Univ. of Science and Technology
16:10-16:20	SunB7.3
370 Multi-modality fusion global localization method for UGVs in rough terrain GNSS-denied environments	
Xijun Zhao	China North Vehicle Research Institute
Bo Su	China North Vehicle Research Institute
Xingxing Guang	China North Vehicle Research Institute
16:20-16:30	SunB7.4
523 A joint longitudinal and lateral guidance scheme for reentry gliding phase of hypersonic vehicles	
Ziyu Wang	Beihang Univ.
Yunjie Wu	Beihang Univ.

Jingqi Duan	Beihang Univ.
16:30-16:40	SunB7.5
568 GNSS fault tolerant navigation algorithm based on factor graph optimized BCE	
Man Luo	Nanjing Univ. of Aeronautics and Astronautics
Haiying Liu	Nanjing Univ. of Aeronautics and Astronautics
Yangguang Xie	AVIC Flight Automatic Control Research Institute
Zhiming Chen	Nanjing Univ. of Aeronautics and Astronautics
16:40-16:50	SunB7.6
621 RRT*-harris: an efficient two-stage approach for autonomous path planning of UAVs	
Dibo Chen	Sun Yat-Sen Univ.
Liping Yang	Univ. of Science and Technology of China
Xiangyu Zhu	Sun Yat-Sen Univ.
Guobin Zhu	Sun Yat-Sen Univ.
Yong Wang	Sun Yat-Sen Univ.
Bo Zhu	Sun Yat-Sen Univ.
16:50-17:00	SunB7.7
649 Integrated secure cooperative communication and control of UAV networks	
Shanyao Ren	Beihang Univ.
Jianwei Liu	Beihang Univ.
Dongyu Li	Beihang Univ.
17:00-17:10	SunB7.8
692 基于改进冲突搜索的多智能体路径规划算法	
Lianbo Yu	Dalian Univ. of Technology
Pinzhao Cao	Dalian Univ. of Technology
Dong Wang	Dalian Univ. of Technology
Jie Lian	Dalian Univ. of Technology
Wei Wang	Dalian Univ. of Technology
17:10-17:20	SunB7.9
839 Attacking satellite remote sensing detection using saliency constrained adversarial patch	
Zhiming Chen	Nanjing Univ. of Aeronautics and Astronautics
Wei Xue	Nanjing Univ. of Aeronautics and Astronautics
Weiwei Tian	Nanjing Univ. of Aeronautics and Astronautics
An Li	Nanjing Univ. of Aeronautics and Astronautics
Hong Zhang	Nanjing Univ. of Aeronautics and Astronautics
17:20-17:30	SunB7.10
920 Actuator fault identification for spacecraft system via an iterative learning observer	
Rui Ma	Nanjing Univ. of Aeronautics and Astronautics

Yule Gui	Nanjing Univ. of Aeronautics and Astronautics
Qingxian Jia	Nanjing Univ. of Aeronautics and Astronautics
Zhong Zheng	Nanjing Tech Univ.
Huayi Li	Harbin Institute of Technology
17:30-17:40	SunB7.11
1004 High-precision attitude compound pointing control for space moving target tracking	
Hong Zhang	Nanjing Univ. of Aeronautics and Astronautics
Yunhua Wu	Nanjing Univ. of Aeronautics and Astronautics
Shengjun Zhong	Nanjing Univ. of Aeronautics and Astronautics
Haibo Guo	Shanghai Institute of Satellite Engineering
17:40-17:50	SunB7.12
1334 考虑输出约束及外部干扰的柔性航天器振动控制	
Shuyang Liu	Changchun Univ. of Technology
Honglei Yang	Changchun Univ. of Technology
Zhenguo Zhang	Changchun Univ. of Technology
Yuan Chun Li	Changchun Univ. of Technology
SunB8 4th Floor Meeting Room 401	
Autonomous Control IV 四层会议室 401	
Chairs: Liaoni Wu	Xiamen Univ.
Delin Luo	Xiamen Univ.
15:50-16:00	SunB8.1
249 四旋翼飞行器的RBF神经网络鲁棒自适应控制	
Zhenwei Ma	Sun Yat-Sen Univ.
Hao Bai	Sun Yat-Sen Univ.
Hongbo Chen	Sun Yat-Sen Univ.
Jinbo Wang	Sun Yat-Sen Univ.
16:00-16:10	SunB8.2
537 Estimator-based finite-time formation-containment control for multiple underactuated quadrotors	
Yuanfang Qu	Northwestern Polytechnical Univ.
Yang Xu	Northwestern Polytechnical Univ.
16:10-16:20	SunB8.3
636 空战格斗飞行机动数据库建立及应用	
Jinyi Ma	Fudan Univ.
Can Wang	Fudan Univ.
Tao Xue	Fudan Univ.
Jianliang Ai	Fudan Univ.
Yiqun Dong	Fudan Univ.
16:20-16:30	SunB8.4
657 基于视觉的无人机远距下滑模糊控制方法	
Chuanxiang Zhou	AVIC Chengdu Aircraft Design Research Institute
Chenggang Tao	AVIC Chengdu Aircraft Design Research Institute
Shaoshan Sun	AVIC Chengdu Aircraft Design Research Institute

Zhaoxu Yang	AVIC Chengdu Aircraft Design Research Institute
Yong Tang	AVIC Chengdu Aircraft Design Research Institute
16:30-16:40 SunB8.5	
694 时变干扰下四旋翼无人机群固定时间编队控制	
Weiming Zheng	Xiamen Univ.
Yang Xu	Northwestern Polytechnical Univ.
Delin Luo	Xiamen Univ.
16:40-16:50 SunB8.6	
749 基于改进型 TECS 的无人机纵向轨迹控制	
Mingming Tian	AVIC Xi'an flight automatic control research institute
Wei Liu	AVIC Xi'an flight automatic control research institute
Mingchao Yang	AVIC Xi'an flight automatic control research institute
Yunyan Wu	AVIC Xi'an flight automatic control research institute
Yueping Wang	AVIC Xi'an flight automatic control research institute
16:50-17:00 SunB8.7	
851 Aerodynamic parameter identification of hypersonic vehicles based on improved harris hawks optimization	
Chu Yin	Nanjing Univ. of Aeronautics and Astronautics
Chunwang Qiao	Nanjing Univ. of Aeronautics and Astronautics
Rui Cao	Nanjing Univ. of Aeronautics and Astronautics
Haidong Shen	Nanjing Univ. of Aeronautics and Astronautics
Yuping Lu	Nanjing Univ. of Aeronautics and Astronautics
Ziyang Zhen	Nanjing Univ. of Aeronautics and Astronautics
17:00-17:10 SunB8.8	
1010 Formation reconfiguration in elliptic orbit for spacecraft without the radial thrust	
Jiang Shao	Harbin Institute of Technology
Qingrui Zhou	China Academy of Space Technology
Dong Ye	Harbin Institute of Technology
Zhaowei Sun	Harbin Institute of Technology
17:10-17:20 SunB8.9	
1111 基于迎角分区的全局飞行器动力学辨识方法研究	
Jianwen Zang	Dalian Univ. of Technology
Xiaoye Bi	Shenyang Aircraft Design and Research Institute
Zhao Jin	Shenyang Aircraft Design and Research Institute
Hao Liu	Dalian Univ. of Technology
Ming Yan	Dalian Univ. of Technology

17:20-17:30 SunB8.10	
1190 基于模型信息补偿的固定翼无人机自抗扰控制器设计	
Hongcheng Li	Nanjing Univ. of Aeronautics and Astronautics
Biao Wang	Nanjing Univ. of Aeronautics and Astronautics
Ruiyu Bu	Nanjing Univ. of Aeronautics and Astronautics
Chaoying Tang	Nanjing Univ. of Aeronautics and Astronautics
17:30-17:40 SunB8.11	
1332 Trajectory prediction model of blended wing body impact entry water based on deep belief network	
Beibei Xing	China Aerodynamics Research and Development Center
Wenhua Wu	China Aerodynamics Research and Development Center
Fei Liao	China Aerodynamics Research and Development Center
Menglei Tu	China Aerodynamics Research and Development Center
Mingqing Lu	Harbin Engineering Univ.
17:40-17:50 SunB8.12	
1351 Multi-UAV task assignment based on the improved discrete pigeon-inspired optimization algorithm(756)	
Yuncong Wei	Nanjing Univ. of Aeronautics and Astronautics
Ben Yang	Nanjing Univ. of Aeronautics and Astronautics
Yanli Du	Nanjing Univ. of Aeronautics and Astronautics
Haidong Shen	Nanjing Univ. of Aeronautics and Astronautics
Yanbin Liu	Nanjing Univ. of Aeronautics and Astronautics
Yu Li	Beijing Institute of Aerospace Technology
SunB9 4th Floor Meeting Room 406	
Intelligent Navigation & Control III 四层会议室 406	
Chairs: Yulong Huang	Harbin Engineering University
Guochang Zhang	Harbin Engineering University
15:50-16:00 SunB9.1	
196 Research on configuration optimization method of aircraft cluster cooperative navigation for real-time ROI	
Huiyuan Zhang	Nanjing Univ. of Aeronautics and Astronautics
Rong Wang	Nanjing Univ. of Aeronautics and Astronautics
Zhi Xiong	Nanjing Univ. of Aeronautics and Astronautics
Jianye Liu	Nanjing Univ. of Aeronautics and Astronautics
16:00-16:10 SunB9.2	

484 <i>High precision and fast initial alignment for vehicle mounted guided rocket in erection process</i>		Zhiyong Miao	Beijing Aerospace Automatic Control Institute
Zhenpeng Wang	System Engineering Institute of Sichuan Aerospace	Bing Li	Beijing Aerospace Automatic Control Institute
Kui Chen	AVIC Xi'an Aeronautics Computing Technique Research Institute	Yi Chen	Beijing Aerospace Automatic Control Institute
Zhou Hu	System Engineering Institute of Sichuan Aerospace	Tao Guo	Beijing Aerospace Automatic Control Institute
Shiwei Fan	Harbin Institute of Technology	17:00-17:10 SunB9.8	
Qi Jiang	System Engineering Institute of Sichuan Aerospace	1085 <i>Factor graph based SINS/DVL integrated navigation method of AUV with sparse beacon measurement</i>	
Minghong Zhu	Ningbo Univ.	Jiarui Cui	National Univ. of Defense Technology
16:10-16:20 SunB9.3		Wenqi Wu	National Univ. of Defense Technology
850 <i>In-motion alignment algorithm with ST-EKF for sins based on n-vector model in polar regions</i>		Maosong Wang	National Univ. of Defense Technology
Chan Liu	National Univ. of Defense Technology	Xianfei Pan	National Univ. of Defense Technology
Wenqi Wu	National Univ. of Defense Technology	Dongyao Yu	National Univ. of Defense Technology
Maosong Wang	National Univ. of Defense Technology	17:10-17:20 SunB9.9	
Guohu Feng	National Univ. of Defense Technology	1193 <i>An improved integrated navigation fault tolerance algorithm based on dynamic evaluation</i>	
Shaokun Cai	National Univ. of Defense Technology	Siyuan Liu	Harbin Institute of Technology
16:20-16:30 SunB9.4		Guochang Zhang	Harbin Engineering Univ.
950 <i>A correcting accelerometer errors algorithm for SINS/CNS integrated system</i>		Yaqin Sun	Navy Submarine Academy
Chunfeng Shi	Southeast Univ.	Ya Zhang	Harbin Institute of Technology
Xiyuan Chen	Southeast Univ.	Wei Gao	Harbin Institute of Technology
Junwei Wang	Southeast Univ.	Shiwei Fan	Harbin Institute of Technology
16:30-16:40 SunB9.5		17:20-17:30 SunB9.10	
978 <i>Estimation and characteristic analysis of GPS differential code bias at the receiver side</i>		1280 <i>NIN-VINS: neural inertial navigation aided visual-inertial system for pedestrian dead reckoning</i>	
Qiankun Zhang	Information Engineering Univ.	Yuhang Gao	Beihang Univ.
Hongzhou Chai	Information Engineering Univ.	Long Zhao	Beihang Univ.
Fan Zhang	Information Engineering Univ.	17:30-17:40 SunB9.11	
Xiangyu Tian	Information Engineering Univ.	1309 <i>Consensus CIF-based imm filtering for multiple-UAV target tracking</i>	
Min Wang	Information Engineering Univ.	Jingchun Li	Peng Cheng Laboratory
Minzhi Xiang	Information Engineering Univ.	Guangsong Yuan	Beihang Univ.
16:40-16:50 SunB9.6		Haibin Duan	Beihang Univ.
1012 <i>UUV cooperative navigation measurement information processing method based on median average filter</i>		17:40-17:50 SunB9.12	
Zuocheng Wu	China Ship Research and Development Academy	1324 <i>Multi-view and multi-target association algorithm for unmanned aerial vehicle clusters based on siamese network</i>	
Hongliang Yin	Beihang Univ.	Hang Zhang	Science and technology on complex system control and intelligent agent cooperation laboratory
Yong Luo	China Ship Research and Development Academy	Chuang Song	Science and technology on complex system control and intelligent agent cooperation laboratory
Qiang Hao	China Ship Research and Development Academy	Jiangbin Zheng	Northwestern Polytechnical Univ.
16:50-17:00 SunB9.7		Mingrui Hao	Science and technology on complex system control and intelligent agent
1049 <i>Performance analysis of an adaptive nonlinear state estimator for ARW of onboard FOG</i>			

cooperation laboratory	
SunB10	4th Floor Meeting Room 407
Autonomous Control VI	四层会议室 407
Chairs: Xiao Liang	Nankai Univ.
Hao Liu	Beihang Univ.
15:50-16:00	SunB10.1
173 <i>Autonomous maneuver avoidance decision technology for large aircraft based on survivability</i>	
Jiaju Wu	AVIC The First Aircraft Institute
16:00-16:10	SunB10.2
248 <i>UAV zero-length launch control law design</i>	
Chengchan He	Xiamen Univ.
Zonghua Sun	Xiamen Univ.
Liaoni Wu	Xiamen Univ.
16:10-16:20	SunB10.3
282 <i>Scheduling of multiple earth observation satellites based on short-term cloud forecasting</i>	
Yi Gu	Beihang Univ.
Chao Han	Beihang Univ.
Yuhan Chen	China Satellite Network Group Co., Ltd
Shenggang Liu	Beihang Univ.
16:20-16:30	SunB10.4
553 <i>Fully distributed time-varying formation control of quadrotors</i>	
Ming Cheng	Beihang Univ.
Yu Tian	Beijing Institute of Electronic System Engineering
Hao Liu	Beihang Univ.
Jianqi Li	Hunan Univ. of Arts and Sciences
16:30-16:40	SunB10.5
576 <i>Finite-time disturbance observer-based tracking control for a powered parafoil system</i>	
Yiming Guo	Northwestern Polytechnical Univ.
Jianguo Yan	Northwestern Polytechnical Univ.
Xiaojun Xing	Northwestern Polytechnical Univ.
Lingwei Li	Northwestern Polytechnical Univ.
Cihang Wu	Northwestern Polytechnical Univ.
Xiwei Wu	Northwestern Polytechnical Univ.
16:40-16:50	SunB10.6
622 <i>Nonsmooth feedback stabilization for a class of lower-triangular stochastic time-delay systems</i>	
Jinping Jia	Tianshui Normal Univ.
Hao Dai	Xidian Univ.
Jianwen Huang	Tianshui Normal Univ.
16:50-17:00	SunB10.7
670 <i>Enhanced-coupling based nonlinear control for aerial transportation systems with variable-length cable</i>	
Hai Yu	Nankai Univ.
Shizhen Wu	Nankai Univ.
Xiao Liang	Nankai Univ.

Yongchun Fang	Nankai Univ.
Jianda Han	Nankai Univ.
17:00-17:10	SunB10.8
702 <i>Dynamic feedback control for model-based linear switched systems</i>	
Jiaming Lu	Bohai Univ.
Taifang Li	Bohai Univ.
17:10-17:20	SunB10.9
796 <i>L1 adaptive control for unmanned quadcopter transportation systems</i>	
Jingwen Huang	Nankai Univ.
Hai Yu	Nankai Univ.
Xiao Liang	Nankai Univ.
Yongchun Fang	Nankai Univ.
Jianda Han	Nankai Univ.
17:20-17:30	SunB10.10
798 <i>Search-based motion planning for quadrotor transporting a cable-suspended load</i>	
Yuhang Zhong	Nankai Univ.
Qianqian Cao	Nankai Univ.
Xiao Liang	Nankai Univ.
Yongchun Fang	Nankai Univ.
Jianda Han	Nankai Univ.
17:30-17:40	SunB10.11
829 <i>Modeling and energy-based nonlinear control design for the multiple quadrotor UAVs with a cable-suspended payload</i>	
Jiaming Cai	Tianjin Univ.
Bin Xian	Tianjin Univ.
17:40-17:50	SunB10.12
931 <i>地形跟随中航迹跟踪控制的两套方案设计</i>	
RuiYu Bu	Nanjing Univ. of Aeronautics and Astronautics
Biao Wang	Nanjing Univ. of Aeronautics and Astronautics
Hongcheng Li	Nanjing Univ. of Aeronautics and Astronautics
Chaoying Tang	Nanjing Univ. of Aeronautics and Astronautics
SunB11	
4th Floor Meeting Room 408	
Design & Simulation	
四层会议室 408	
Chairs: Yuwei Zhang	Beihang Univ.
Yufeng Qu	Beihang Univ.
15:50-16:00	SunB11.1
95 <i>面向复杂测试验证环境的通用软件架构设计</i>	
Haowen Zhang	AVIC Xi'an Flight Automatic Control Research Institute
Tonghui Wang	AVIC Xi'an Flight Automatic Control Research Institute
16:00-16:10	SunB11.2
402 <i>Research on vibration load spectrum of aero engine control system based on fatigue damage equivalence</i>	
Danni Yu	AECC Aero Engine Control

	System Institute	
Zepeng Lu	AECC Aero Engine Control	
	System Institute	
Yahui Gao	AECC Aero Engine Control	
	System Institute	
16:10-16:20	SunB11.3	
413 <i>MBSE-based application system design for medical colleges--taking clinical staff data management system as an example</i>		
Dawen Ding	Medical Capital Univ.	
Zhiqiang Zhao	Medical Capital Univ.	
Wei Zhang	Medical Capital Univ.	
Haining Liu	Medical Capital Univ.	
16:20-16:30	SunB11.4	
512 <i>Temperature field analysis of heating furnace of superplastic forming equipment based on thermal resistance network model</i>		
Tianyuan Li	Beihang Univ.	
Mei Yuan	Beihang Univ.	
Yufeng Qu	Beihang Univ.	
Sihan Zhang	Beihang Univ.	
Baoyong Li	Beijing Hangxing Machine Manufacturing Co., Ltd	
Yingtao Zhou	Beijing Hangxing Machine Manufacturing Co., Ltd	
16:30-16:40	SunB11.5	
561 <i>Rotordynamic analysis of different assembly processes of rotor for magnetic suspended turbomolecular pump</i>		
Xiuqi Zhao	Beihang Univ.	
Di Zhang	Beihang Univ.	
Haoan Wang	Beihang Univ.	
Haoting Wu	Beihang Univ.	
Zhenzhen Zhang	Beihang Univ.	
Liming Wang	Beihang Univ.	
16:40-16:50	SunB11.6	
654 <i>Model-based integrated test research on general quality characteristics of aviation equipment</i>		
Jin Xiao	Beihang Univ.	
Mingchuan Yang	Beihang Univ.	
Xiaoguang Hu	Beihang Univ.	
Xiang Pan	Beihang Univ.	
16:50-17:00	SunB11.7	
660 <i>M2Coder: a fully automated translator from Matlab M-functions to C/C++ codes for ACS motion controllers</i>		
Xiaowei Yang	Fudan Univ.	
Xuchen Wang	Fudan Univ.	
Zidong Liu	Fudan Univ.	
Feng Shu	Fudan Univ.	
17:00-17:10	SunB11.8	
734 <i>可重复使用火箭运动的开源可视化 Simulink-FlightGear 联合仿真研究</i>		
Zhenwei Ma	Sun Yat-sen Univ.	
Jianlin Shi	Sun Yat-sen Univ.	

Hongbo Chen	Sun Yat-sen Univ.
Jinbo Wang	Sun Yat-sen Univ.
17:10-17:20	SunB11.9
826 <i>集群航弹协同飞行模拟器的进程级分布式设计方法</i>	
Changwei Mi	Norinco Group Air Ammunition Research Institute Co.LTD
Xu Wu	Norinco Group Air Ammunition Research Institute Co.LTD
Fengzhu Che	Norinco Group Air Ammunition Research Institute Co.LTD
Guangdi Luo	Norinco Group Air Ammunition Research Institute Co.LTD
17:20-17:30	SunB11.10
951 <i>MBSE-based turbofan engine system simulation platform design</i>	
Shuya Li	Tsinghua Univ.
Qing Li	Tsinghua Univ.
Jianchao Zhang	Aero Engine Academy of China
17:30-17:40	SunB11.11
1005 <i>Simulation method of multi-DOF motion control system</i>	
Guoxing Chen	The 45th Research Institute of CETC
17:40-17:50	SunB11.12
1216 <i>Formal modeling and safety verification for mode logic requirements of flight guidance control system</i>	
Junan Li	Nanjing Univ. of Aeronautics and Astronautics
Jun Hu	Nanjing Univ. of Aeronautics and Astronautics
Lisong Wang	Nanjing Univ. of Aeronautics and Astronautics
Xin Cai	Nanjing Univ. of Aeronautics and Astronautics
SunB12 4th Floor Meeting Room 411	
Navigation Technology IV 四层会议室 411	
Chairs: Qinghua Zeng	Nanjing Univ. of Aeronautics and Astronautics
Qieqie Zhang	Nanjing Univ. of Aeronautics and Astronautics
15:50-16:00	SunB12.1
103 <i>Improved unscented kalman filter for satellite attitude estimation</i>	
Shuai Chu	Harbin Engineering Univ.
Huaming Qian	Harbin Engineering Univ.
Shuya Yan	Harbin Engineering Univ.
Di Zhao	Harbin Engineering Univ.
16:00-16:10	SunB12.2
317 <i>VINS-ACI: a visual-inertial navigation system adaptive to complex illumination by feature quality</i>	
Yilin Zhao	Beihang Univ.
Long Zhao	Beihang Univ.
16:10-16:20	SunB12.3

385 <i>A brain-inspired scene recognition and visual navigation scheme</i>	
Jiaqi Wei	North Univ. of China
Donghua Zhao	North Univ. of China
Chenguang Wang	North Univ. of China
Jun Tang	North Univ. of China
Chong Shen	North Univ. of China
Jun Liu	North Univ. of China
Wenzhao Wang	North Univ. of China
16:20-16:30	SunB12.4
531 <i>Unsupervised monocular visual odometry with lightweight depth architecture</i>	
Linxin Pan	Beihang Univ.
Zhenghua Liu	Beihang Univ.
16:30-16:40	SunB12.5
804 <i>A brain-inspired 3D cognitive map construction method incorporating monocular visual features</i>	
Dan Shen	Sun Yat-sen Univ.
Gelu Liu	Sun Yat-sen Univ.
Tianci Li	Sun Yat-sen Univ.
Junbin Guo	Sun Yat-sen Univ.
Kai Xiao	Sun Yat-sen Univ.
Xiangwei Zhu	Sun Yat-sen Univ.
16:40-16:50	SunB12.6
809 <i>Adaptive estimation of measurement noise variance in kinematic precise point positioning</i>	
Qieqie Zhang	Nanjing Univ. of Aeronautics and Astronautics
Jizhou Lai	Nanjing Univ. of Aeronautics and Astronautics
Pin Lv	Nanjing Univ. of Aeronautics and Astronautics
16:50-17:00	SunB12.7
880 <i>The research and application of improved ORB feature matching algorithm</i>	
Chang Liu	Shanghai Univ. of Engineering Science
Shuwen Dang	Shanghai Univ. of Engineering Science
17:00-17:10	SunB12.8
886 <i>System-level calibration method considering nonorthogonal angles in dual-axis rotational inertial navigation system</i>	
Yusen Lin	Beijing Institute of Technology
Lingjuan Miao	Beijing Institute of Technology
Zhiqiang Zhou	Beijing Institute of Technology
Qi Ming	Beijing Institute of Technology
17:10-17:20	SunB12.9
1325 <i>A fast yaw alignment algorithm of seaplane based on LSTM network</i>	
Xiaoling Zhu	Nanjing Univ. of Aeronautics and Astronautics
Qinghua Zeng	Nanjing Univ. of Aeronautics and Astronautics

Tianyu Zhao	Nanjing Univ. of Aeronautics and Astronautics
Bin Zhao	Nanjing Univ. of Aeronautics and Astronautics
Wei Qiao	Nanjing Univ. of Aeronautics and Astronautics
17:20-17:30	SunB12.10
1326 <i>Development and future direction of unmanned system based on inertial integrated navigation</i>	
Fangdong Li	Nanjing Univ. of Aeronautics and Astronautics
Qinghua Zeng	Nanjing Univ. of Aeronautics and Astronautics
Zhi Xiong	Nanjing Univ. of Aeronautics and Astronautics
Yineng Li	Nanjing Univ. of Aeronautics and Astronautics
Chen Shao	Nanjing Univ. of Aeronautics and Astronautics
17:30-17:40	SunB12.11
1329 <i>An image enhancement method based on adaptive gamma transformation</i>	
Yineng Li	Nanjing Univ. of Aeronautics and Astronautics
Qinghua Zeng	Nanjing Univ. of Aeronautics and Astronautics
Yixue Luo	Nanjing Univ. of Aeronautics and Astronautics
Jianye Liu	Nanjing Univ. of Aeronautics and Astronautics
Zhi Xiong	Nanjing Univ. of Aeronautics and Astronautics
17:40-17:50	SunB12.12
1343 <i>Vision based relative state and inertia knowledge estimation of un-cooperative targets</i>	
Qian Feng	Nanjing Research Institute of Electronics
Junruo Sun	Nanjing Research Institute of Electronics
Lu Wang	Space System Department Equipment Department
Kang Ma	Nanjing Research Institute of Electronics
SunB13 4th Floor Meeting Room 415	
Control & Simulation II 四层会议室 415	
Chairs: Mingwei Lv	AVIC Shenyang Aircraft Design and Research Institute
Yike Song	AVIC Shenyang Aircraft Design and Research Institute
15:50-16:00	SunB13.1
111 <i>Cooperative collision avoidance route planning based on improved RRT algorithm</i>	

Yike Song	AVIC Shenyang Aircraft Design and Research Institute	Runhao Cui	Beihang Univ.
Mingwei Lv	AVIC Shenyang Aircraft Design and Research Institute	Diyin Tang	Beihang Univ.
Shaoqing Zhang	AVIC Shenyang Aircraft Design and Research Institute	Bin Chen	Beijing Institute of Control Engineering
Yanwei Wang	AVIC Shenyang Aircraft Design and Research Institute		
16:00-16:10	SunB13.2	17:00-17:10	SunB13.8
175 <i>AHP-based interactive target threat level assessment and visualization method</i>		856 <i>Three-dimensional path planning algorithm for global path of AUV based on ROBL-MFO</i>	
Jiaxin Hu	National Univ. of Defense Technology	SALVADOR N. OBAMA	Univ. of Science and Technology of China
Yanwei Zhu	National Univ. of Defense Technology	OYANA	
Huan Huang	National Univ. of Defense Technology	Jun Li	Univ. of Science and Technology of China
Ming Zhen	National Univ. of Defense Technology		
Xi Long	National Univ. of Defense Technology	17:10-17:20	SunB13.9
16:10-16:20	SunB13.3	959 <i>An improved planar electrode ECT image reconstruction algorithm applied to composites defect detection</i>	
227 <i>A modeling method for flight simulator TCAS simulation system</i>		Yongbo He	Civil Aviation Univ. of China
Hong Zhu	COMAC Shanghai Aircraft Design and Research Institute	Ganghui Han	Civil Aviation Univ. of China
16:20-16:30	SunB13.4	Wenru Fan	Civil Aviation Univ. of China
231 <i>LSTM-based shuler oscillation error restriction for shipborne SINS</i>		17:20-17:30	SunB13.10
Ning Mao	Naval Univ. of Engineering	983 <i>A complement graph based heuristic algorithm for embedded register allocation</i>	
An Li	Naval Univ. of Engineering	Zhinan Liu	AVIC Shenyang Aircraft Design and Research Institute
Jiangning Xu	Naval Univ. of Engineering	Jianshe Wu	Xidian Univ.
Hongyang He	Naval Univ. of Engineering	Haoran Gong	AVIC Shenyang Aircraft Design and Research Institute
16:30-16:40	SunB13.5	Yuxin Wang	Xidian Univ.
366 <i>The impact dynamics and simulations of space net</i>		17:30-17:40	SunB13.11
Ming Zhen	National Univ. of Defense Technology	989 <i>基于栅格的隐身飞机最优航路规划算法</i>	
Leping Yang	National Univ. of Defense Technology	Xiaoning Ma	AVIC Shenyang Aircraft Design and Research Institute
Yanwei Zhu	National Univ. of Defense Technology	Jin Yu	Xidian Univ.
Huan Huang	National Univ. of Defense Technology	Haoran Gong	AVIC Shenyang Aircraft Design and Research Institute
Jiaxin Hu	National Univ. of Defense Technology	Xin Yu	Xidian Univ.
16:40-16:50	SunB13.6	Jiangtao Li	Xidian Univ.
397 <i>Multi-beam jamming resource scheduling of UAV based on artificial bee colony algorithm</i>		17:40-17:50	SunB13.12
Mingqiu Ren	Air Force Early Warning Academy	1102 <i>Research on key technologies of air defense weapon interception decision system</i>	
16:50-17:00	SunB13.7	Zehui Wang	Xidian Univ.
479 <i>Digital twin modeling for aerospace CMG based on energy analysis</i>		Xin Yu	Xidian Univ.
		Changchang Wang	Xidian Univ.
		Yue Zhao	Xidian Univ.
		SunB14	4th Floor Meeting Room 418
		Navigation Technology V	四层会议室 418
		Chairs: Kedong Wang	Beihang Univ.
		Zhennan Li	Beihang Univ.
		15:50-16:00	SunB14.1
		348 <i>A research on a Integrated GNSS/INS/ODO train-based positioning technology</i>	
		Xin Zhou	Lanzhou Jiaotong Univ.
		Guangwu Chen	Lanzhou Jiaotong Univ.
		Yongbo Si	Lanzhou Jiaotong Univ.

Peng Li	Lanzhou Jiaotong Univ.	17:30-17:40	SunB14.11
Haoyu Zhai	China Railway Construction Corporation	1266 <i>False alarm and missed detection controllable validation method for GNSS integer ambiguity rounding estimator</i>	
16:00-16:10	SunB14.2	Jia Chun	Harbin Engineering Univ.
374 <i>A new control optimization strategy for error identification of open-loop hemispherical resonator gyroscopes</i>		Chongyang Li	Harbin Engineering Univ.
Xinda Shi	Northwestern Polytechnical Univ.	Yang Li	Harbin Engineering Univ.
Xiaoxu Wang	Northwestern Polytechnical Univ.	Yongqi Weng	Harbin Engineering Univ.
16:10-16:20	SunB14.3	17:40-17:50	SunB14.12
424 <i>星光折射定位误差分析</i>		1333 <i>A UWB/IMU two-node position estimation method without anchor node</i>	
Zhennan Li	Beihang Univ.	Jinyi Yang	National Univ. of Defense Technology
Kedong Wang	Beihang Univ.	Yan Guo	National Univ. of Defense Technology
16:20-16:30	SunB14.4	Ruihang Yu	National Univ. of Defense Technology
448 <i>基于单目相机的室内 PL-SLAM 算法研究</i>		Yiting Chen	National Univ. of Defense Technology
Junjie Zhou	Beihang Univ.	Wenkai Xiang	National Univ. of Defense Technology
Kedong Wang	Beihang Univ.	SunB15	5th Floor Meeting Room 502
16:30-16:40	SunB14.5	US Swarm VI	五层会议室 502
455 <i>大气消光对星敏感器仪器星等的影响研究</i>		Chairs: Yang Xu	Northwestern Polytechnical Univ.
Haiyong Wang	Beihang Univ.	Lanyong Zhang	Harbin Engineering Univ.
Mohan Hua	Beihang Univ.	15:50-16:00	SunB15.1
Wei Zhang	Beihang Hangzhou Innovation Institute	215 <i>Key technologies of the cooperative combat of manned aerial vehicle and unmanned aerial vehicle</i>	
16:40-16:50	SunB14.6	Yu Wang	National Univ. of Defense Technology
475 <i>基于位姿预测的改进 Hector SLAM</i>		Hao Chen	National Univ. of Defense Technology
Xinyu Sun	Beihang Univ.	Quan Liu	National Univ. of Defense Technology
Kedong Wang	Beihang Univ.	Jian Huang	National Univ. of Defense Technology
16:50-17:00	SunB14.7	16:00-16:10	SunB15.2
536 <i>3D Zernike 矩与地形高程标准差的相关性</i>		292 <i>Distributed cooperative search based on NSGA-II-RHO under communication constraint</i>	
Wenhui Han	Beihang Univ.	Jiashuai Si	Science and Technology on Complex System Control and Intelligent Agent Cooperation Laboratory
Kedong Wang	Beihang Univ.	Mingrui Hao	Harbin Institute of Technology
17:00-17:10	SunB14.8	Zhenchang Liu	Science and Technology on Complex System Control and Intelligent Agent Cooperation Laboratory
619 <i>Improving loosely coupled GNSS/IMU fusion performance with pseudorange error prediction in urban areas</i>		16:10-16:20	SunB15.3
Zixuan Zhang	Nanjing Univ. of Aeronautics and Astronautics	345 <i>基于改进人工势场法的无人车围捕策略</i>	
Rui Sun	Nanjing Univ. of Aeronautics and Astronautics	Kun He	Harbin Engineering Univ.
17:10-17:20	SunB14.9	Lanyong Zhang	Harbin Engineering Univ.
722 <i>A new dual-polarization GNSS antenna and IMU integration algorithm for urban navigation</i>		Yuru Tian	Harbin Engineering Univ.
Xueru Ge	Nanjing Univ. of Aeronautics and Astronautics	16:20-16:30	SunB15.4
Rui Sun	Nanjing Univ. of Aeronautics and Astronautics	389 <i>Trajectory tracking controller of underwater vehicle with external disturbances and model uncertainties</i>	
17:20-17:30	SunB14.10	Jihang Yang	Zhejiang Ocean Univ.
1136 <i>Vision-aided precision landing guidance technology for long-endurance loitering missile</i>		Yonghe Xie	Zhejiang Ocean Univ.
Xu Wu	Norinco Group Air Ammunition Research Institute Co.LTD	Gangqiang Li	The Univ. of Manchester
Guangdi Luo	Norinco Group Air Ammunition Research Institute Co.LTD	16:30-16:40	SunB15.5
Fengzhu Che	Norinco Group Air Ammunition Research Institute Co.LTD	407 <i>Finite-time tracking control of underactuated surface vessels with disturbance compensation</i>	
		Haoyang Li	Shandong Jiaotong Univ. Shandong Jiaotong Univ.
		Xiangfei Meng	

Qiang Zhang	Shandong Jiaotong Univ.	1272 Collaborative SLAM system based on shared priori maps	
Hengtao Wu	Shandong Jiaotong Univ.	Chunxu Wu	Beijing Institute of Technology
Caifan Wang	Shandong Jiaotong Univ.	Yicheng Shou	Beijing Institute of Technology
Xiaobo Li	Shandong Jiaotong Univ.	Zhen Li	Beijing Institute of Technology
Guibing Zhu	Zhejiang Ocean Univ.	Xiangdong Liu	Beijing Institute of Technology
16:40-16:50	SunB15.6	SunB16	5th Floor Meeting Room 503
436 Event-triggered coordinated control based on disturbance observer for second-order nonlinear systems		Multi-agent System II	五层会议室 503
Fuqiang Di	Northwestern Polytechnical Univ.	Chairs: Cheng Yuwen	Nanjing Univ. of Aeronautics and Astronautics
Xiangyang Mo	Northwestern Polytechnical Univ.	Liangdong Wen	Nanjing Univ. of Aeronautics and Astronautics
Aijun Li	Northwestern Polytechnical Univ.	15:50-16:00	SunB16.1
Yong Guo	Northwestern Polytechnical Univ.	331 基于一致性理论的无人机编队控制与集结方法	
16:50-17:00	SunB15.7	Jinzhao Gou	Chongqing Univ.
478 Event-triggered finite-time adaptive coordinated control for spacecraft formation flying under actuator faults		Tianjiao Liang	Chengdu Aircraft Design and Research Institute of AVIC
Lihao Wang	Northwestern Polytechnical Univ.	Chenggang Tao	Chengdu Aircraft Design and Research Institute of AVIC
Aijun Zhang	Northwestern Polytechnical Univ.	Bo Ma	Chengdu Aircraft Design and Research Institute of AVIC
Changqing Wang	Northwestern Polytechnical Univ.	Haifeng Wang	Chengdu Aircraft Design and Research Institute of AVIC
Fuqiang Di	Northwestern Polytechnical Univ.	Yu Wu	Chongqing Univ.
17:00-17:10	SunB15.8	16:00-16:10	SunB16.2
743 Resource modeling and capability assessment for space-based information system		487 Decentralized cooperative control of electromagnetic formation using robust 6-DOF cyclic pursuit approach	
Dong Zhang	Xian Satellite Control Center	Huan Huang	National Univ. of Defense Technology
Jianhai Zhang	State Key Laboratory of Astronautic Dynamics	Weiwei Cai	National Univ. of Defense Technology
Wei Zhang	Xian Satellite Control Center	Ming Zhen	National Univ. of Defense Technology
Weihong Song	Xian Satellite Control Center	Yuanwen Zhang	National Univ. of Defense Technology
Haoxue Li	Xian Satellite Control Center	16:10-16:20	SunB16.3
17:10-17:20	SunB15.9	539 编队协同飞行中无人机应急返航策略	
823 On distributed state estimation with bearing measurements		Sen Yang	AVIC Xi'an flight automatic control research institute
Chenxu Liang	CAS	Xianglun Zhang	FACRI
Wenchao Xue	CAS	Qiang Tang	FACRI
Haitao Fang	CAS	Yazhou Yue	AVIC Xi'an flight automatic control research institute
Wenyan Bai	Academy of Mathematics and Systems Science,UCAS	16:20-16:30	SunB16.4
Yuteng Cao	Beijing Aerospace Automatic Control Institute	542 Research on autonomous collision avoidance method of cooperative UAV	
17:20-17:30	SunB15.10	Wen Ma	FACRI
996 Trajectory tracking control for autonomous underwater vehicle based on rotation matrix attitude representation with input quantization		Jin Liang	AVIC Xi'an flight automatic control research institute
Ziyang Huang	Harbin Engineering Univ.	16:30-16:40	SunB16.5
Jun Li	Harbin Engineering Univ.	738 Multi-UAV formation control under constraints	
Lei Zhang	Harbin Engineering Univ.	Ru Zhang	Beihang Univ.
17:30-17:40	SunB15.11	Zhenghua Liu	Beihang Univ.
1058 A review of underwater multi-source positioning and navigation technology		Ziqi Cao	Beihang Univ.
Wanglong Zhao	Harbin Institute of Technology	16:40-16:50	SunB16.6
Shuaijie Qi	Harbin Institute of Technology	753 Multi-UAV formation control with time-varying nash equilibrium	
Ruitong Liu	Harbin Institute of Technology(Weihai)		
Guoyao Zhan	Harbin Institute of Technology(Weihai)		
Gongliang Liu	Harbin Institute of Technology		
17:40-17:50	SunB15.12		

	Engineering		
Lijia Cao	Sichuan Univ. of Science and		
	Engineering		
17:00-17:10	SunB17.8		
782 《传感器与测试技术基础》课程教学改革研究			
Bei Yan	Beihang Univ.		
17:10-17:20	SunB17.9		
1274 人工智能时代下专业创新性人才培养方法			
Mou Chen	Nanjing Univ. of Aeronautics and		
	Astronautics		
17:20-17:30	SunB17.10		
1317 基于虚拟仿真的飞机维修职业教育实验教学建设与实践			
Qingxia Qin	Civil Aviation Univ. of China		
Wengao Qian	Civil Aviation Univ. of China		
Xihua Ma	HNA Aviation Technology (Tianjin) Co.,		
	Ltd		
SunB18	4th Floor Aisle		
Poster Session 4	四层廊厅		
15:50-17:50	SunB18.1		
144 装载方案对航空货运系统安全性的影响研究			
Wenjuan Lei	AVIC Qingan Group Co., Ltd		
Meng Nan	AVIC Qingan Group Co., Ltd		
15:50-17:50	SunB18.2		
153 一种新型登机门开启限速装置的设计与仿真分析			
Wenjing Zhi	AVIC Qingan Group Co., Ltd		
Jiangang Li	AVIC Qingan Group Co., Ltd		
Chen Zhang	AVIC Qingan Group Co., Ltd		
Xiujun Du	AVIC Qingan Group Co., Ltd		
Dongping Liu	AVIC Qingan Group Co., Ltd		
15:50-17:50	SunB18.3		
183 <i>Single-point positioning with altitude constraints: a hard constrain and a weighted constrain</i>			
Shiyu Ren	Civil Aviation Univ. of China		
Xiangyuan Yang	Civil Aviation Univ. of China		
Tianru Diao	Civil Aviation Univ. of China		
Yuyin Tian	Civil Aviation Univ. of China		
Wantong Chen	Civil Aviation Univ. of China		
15:50-17:50	SunB18.4		
194 <i>Optimal avoidance path planning and guidance method for ground targets based on artificial repulsion field</i>			
Yang Li	Beijing Aerospace Automatic		
	Control Institute		
Haibin Zhao	Beijing Aerospace Automatic		
	Control Institute		
Chunhong Lv	Beijing Aerospace Automatic		
	Control Institute		
Lu Sun	China Academy of Launch		
	Vehicle Technology		
15:50-17:50	SunB18.5		
214 基于改进蚁群算法的机器人遍历路径规划			
Yuxing Liu	Beihang Univ.		
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	1038	SunB3.10	Cong Huang	0758	SatA1.8
	1340	SatA18.44	Cong Liu	1237	SatA12.11
Chong Zhen	0816	SatA8.4		0713	SatB9.8
	0501	SatA13.7		1246	SatB13.12
	0858	SatA13.10	Cong Wang	0857	SunB6.4
Chongchong Wang	0777	SunB3.2	Cong Xie	0204	SunA11.1
Chonglei Sun	1044	SunA18.35	Cong Zhang	0882	SatA4.9
Chongyang Li	1266	SunB14.11	Cuicui Li	0197	SatB18.6
Chris Gerada	1099	SatA18.6	Cun Xu	0803	SatB18.24
	0400	SunA9.1	Cunbo Lu	0639	SunB2.3
Chu Yin	0851	SunB8.7	Cunyi Hu	0261	SatB14.3
Chuan Wang	0309	SunA18.7		0188	SunA18.3
Chuan Yan	0861	SunB16.8	Cunyu Bao	0534	SunB5.6
Chuang Song	1324	SunB9.12	D		
Chuangxin He	1211	SatB18.39	Da Huo	0327	SunA8.2
Chuangye Chang	1218	SatB18.40	Daicheng Qin	0309	SunA18.7
Chuanjian Lin	0131	SatB5.2	Daiming Liu	0591	SunA18.17
	0216	SatA5.3	Dan Li	1159	SatB13.11

	1128	SatB18.35	Dewang Chen	0359	SatA4.3
	0416	SatA18.17	Dexin Xu	0239	SatB18.9
Dan Liu	0187	SatB3.1		0480	SunB18.17
Dan Shen	0804	SunB12.5	Deyun Zhou	0116	SatA5.1
Dan Wang	0070	SunA10.1	Di Fang	0149	SatB13.1
Dan Yu	1187	SunA7.11		0480	SunB18.17
Dalong Zhang	0140	SunA15.1	Di Huang	0612	SatA6.6
Dan Zheng	0575	SunA8.6		0614	SatA6.7
Dandan Hu	1335	SatA6.12	Di Wu	0976	SunB6.7
	0718	SatB6.5		1222	SunB6.11
Dangbo Du	1331	SunB18.47		0624	SunA13.7
Danghui Yan	1164	SatB5.11	Di Yang	1239	SatB18.42
Danni Yu	0402	SunB11.2	Di Zhang	0561	SunB11.5
Danting Sheng	0434	SatB18.16	Di Zhao	0103	SunB12.1
Danzhu Zhang	1065	SunA5.7		0879	SatA3.5
Daobo Wang	0819	SatB18.25	Di Zhou	1248	SatB2.12
Dapeng Tao	0648	SunA12.7	Di Zhu	0969	SunA18.29
Dapeng Yang	1194	SatA8.11	Dibo Chen	0621	SunB7.6
	0107	SatA13.2	Dibo Xiao	1073	SatB5.8
	1018	SatA13.11	Dibo Xiao	0225	SatB11.2
	0945	SatB8.5	Dingchi Sun	0884	SunA6.10
Dapeng Zhou	1041	SatA8.5	Dingjie Wang	1063	SatB12.10
	1133	SatA8.6		1008	SatB18.32
	1152	SatA8.9	Dingkun Mao	0878	SunA18.24
	0107	SatA13.2	Diqian Wang	1294	SatA9.12
	0230	SatA19.11	Diyin Tang	1165	SatA17.9
Daquan Tang	0656	SunA12.8		0479	SunB13.7
Dawei Li	0687	SatA9.5	Dong Hou	0662	SunB18.26
Dawei Mu	1245	SunA3.11	Dong Li	1176	SunA2.11
	1290	SunA3.12	Dong Qi	0238	SatB11.5
Dawei Wu	0432	SatA1.5	Dong Wang	0692	SunB7.8
Dawen Ding	0413	SunB11.3		1289	SunA13.12
Dechang Hu	1202	SunA18.40	Dong Ye	1010	SunB8.8
Defu Lin	0482	SunB6.1	Dong Zhang	0746	SunA4.7
Dehai Zhu	0691	SunA6.9		0297	SatB1.3
Delin Li	1218	SatB18.40		0558	SatA18.22
Delin Luo	0694	SunB8.5		0984	SunA6.11
Delong Cui	0219	SunA18.6		0743	SunB15.8
Dengfeng Wang	0582	SunA3.3	Dongbo Zhang	0544	SunB18.19
Dengwei Song	0745	SatA4.5	Dongfang Zhu	0695	SatB10.4
	1192	SatA4.11	Donghua Zhao	0385	SunB12.3
Dengyong Zuo	1060	SatA14.7	Donghui Wang	0298	SunA13.1
Deqing Huang	0359	SatA4.3	Donghui Wei	0707	SatB15.6
Deren Gong	1149	SunA3.8	Donghui Yuan	0202	SatA13.3
	1198	SunA3.10	Donglai Li	1301	SatA17.11

Dongli Yuan	1060	SatA14.7	Fei Yu	1260	SatB9.12
Dongming Fan	1310	SunB2.12	Feilong Lai	0629	SatB6.4
Dongping Liu	0153	SunB18.2	Feiteng Jin	0581	SatB11.7
	0159	SatA2.1	Feiyu Jin	0315	SatA1.3
	0169	SatA2.3	Fenfen Xiong	0528	SatB16.2
Dongping Sun	0099	SatB18.3	Fenfen Wang	1090	SatA18.34
Dongqi Pan	1245	SunA3.11	Feng Li	0180	SatA3.1
	1290	SunA3.12	Feng Liu	0387	SatA16.7
Dongqing Chen	0632	SatA13.8	Feng Qiu	1052	SatB18.33
Dongxu Wu	1248	SatB2.12	Feng Shu	0660	SunB11.7
Dongxu Yang	0969	SunA18.29	Feng Yang	1255	SatA18.41
Dongyao Yu	1085	SunB9.8		1337	SatA15.12
Dongyu Li	0649	SunB7.7		0244	SatB3.3
Dongzhu Feng	0591	SunA18.17		0667	SunA9.2
Duo Li	1076	SunA18.36		0971	SunA18.30
Duo Wu	0889	SatA6.11		0970	SunB6.6
E			Feng Yue	0150	SatB13.2
Enguang Guan	1202	SunA18.40	Feng Zhang	0802	SunA2.5
Enjiao Zhao	0287	SatA19.5		0899	SunA8.7
Ershen Wang	0610	SatA7.3		0900	SunA8.8
Erzhuo Niu	0564	SunA13.5	Fenghua He	1341	SatA18.8
	0594	SunA13.6		1206	SunB6.9
F			Fengming Han	0501	SatA13.7
Fan Li	0643	SunB17.4	Fengqi Zheng	1186	SatB18.38
Fan Liu	0419	SatB12.4	Fengyi Song	0155	SatB18.5
	0583	SatB12.6	Fengzhu Che	0826	SunB11.9
Fan Zhang	0303	SatA19.6		1136	SunB14.10
	0453	SatB3.7		0545	SunB18.20
	0978	SunB9.5	Florian Holzapfel	0226	SunB4.2
Fang Fang	0349	SatB1.4		0267	SunB4.3
Fang Li	0117	SatB9.1		0601	SunB4.5
Fangdong Li	1323	SunA18.44		0988	SunB4.7
	1326	SunB12.10	Fubiao Zhang	0747	SunA7.8
Fangyan Li	1083	SatA19.3		0313	SunA16.4
Fantai Lin	0458	SunA15.6		0482	SunB6.1
Fei Cen	1302	SunB4.12	Fulin Song	0608	SatA9.4
Fei Han	0618	SatA3.3	Fuping Sun	0299	SatB18.12
	1336	SunA8.12	Fuqiang Di	0436	SunB15.6
Fei Kong	0085	SatA6.1		0478	SunB15.7
Fei Liao	0575	SunA8.6	Fuqing Duan	0902	SunA14.6
	1338	SunA15.11	Futao Wang	1109	SunA2.10
	1332	SunB8.11	Fuyang Chen	1177	SatB4.12
Fei Liu	0423	SatA11.4		0563	SunA6.4
Fei Luo	1169	SatA8.10		1191	SunB1.11
Fei Yan	1259	SatA9.10	Fuyi Wang	0795	SatA15.9

G				0970	SunB6.6
Gang An	0322	SatB18.14		0246	SatA18.11
Gang Chen	1303	SunB5.12		0971	SunA18.30
Gang Ke	1133	SatA8.6		1042	SunA18.34
Gang Wang	0732	SunA9.3	Guangwu Chen	0348	SunB14.1
	0911	SunA9.5	Guangxi Chen	0510	SunA12.4
Ganghui Han	0959	SunB13.9	Guangxun Du	1045	SatA19.13
Gangqiang Li	0389	SunB15.4	Guangyu Yang	0921	SatB15.8
Gaojie Ma	0322	SatB18.14		0960	SunB5.10
Gaowang Zhang	0433	SunA10.6	Guangyuan Wang	1289	SunA13.12
Ge Lan	0319	SatA8.3	GuanHao Wen	1046	SunA9.8
Ge Song	0765	SatA9.6	Guanjie Wang	0552	SatB15.3
	0418	SatB13.6	Guanjun Wang	0733	SunB18.27
Gelu Liu	0804	SunB12.5	Guanlin Zeng	1347	SatA18.45
Gen Wang	0499	SatA10.2	Guanyu Zou	0674	SatB9.7
Gong Chen	1186	SatB18.38	Gui Hu	0774	SunA5.3
Gongliang Liu	1058	SunB15.11	Guibing Zhu	0407	SunB15.5
Gongmin Yan	0554	SatB12.5	Guichen Zhang	0277	SunA17.4
	0583	SatB12.6	Guilei Cui	0408	SatB1.5
Gongquan Tan	0719	SunB17.7	Guili Xu	0690	SunA6.8
Guancong Li	0994	SatB18.30		0650	SunA6.6
Guanfeng Yu	0927	SatB18.27	Guilin Zhang	1125	SatB15.11
Guang Li	1254	SatA10.12	Guilu Li	0578	SatA9.3
Guang Zhang	0821	SatA10.5	Guiming Li	1285	SunA10.12
	0752	SunB1.6	Guiyan Liu	1229	SunA17.12
Guangbin Cai	0878	SunA18.24	Gun Li	0837	SunA1.7
Guangdi Luo	0826	SunB11.9	Guo Li	0824	SatA18.28
	1136	SunB14.10	Guobin Zhu	0621	SunB7.6
	0828	SunA18.22	Guocai Li	1251	SatA18.40
Guange Chen	0415	SatB12.3	Guochang Zhang	1260	SatB9.12
Guangen Gao	0659	SatA12.7		0766	SunB5.8
	1282	SatA12.12		1193	SunB9.9
Guangfu Ma	1292	SunB3.11	Guochen Niu	0625	SatA6.8
Guanghui Wang	0890	SunB3.5		1307	SatB6.10
	0758	SatA1.8		1311	SatB6.11
Guanghui Wen	0912	SunA9.6		1319	SatB6.12
Guangjiong Zhang	0515	SatB2.6	Guohu Feng	0211	SunA17.1
Guangsong Yuan	1309	SunB9.11		0212	SunA17.2
Guangtong Xu	0977	SatB10.10		0850	SunB9.3
	1029	SatB10.11		1347	SatA18.45
	1354	SatB16.12	Guojian Tang	0860	SatB11.10
Guangwei Xue	1327	SunB16.11		1353	SatB11.12
Guangwen Li	0972	SunB3.6		1063	SatB12.10
	0973	SunB3.7		1008	SatB18.32
				0534	SunB5.6

	0764	SatA18.26	Haining Liang	1233	SatB2.11
	1352	SunA18.45	Haining Liu	0413	SunB11.3
Guopeng Qiao	1001	SatB14.10	Haipeng Ren	0769	SatB4.9
Guopeng Wang	0339	SatB3.5		0708	SatB10.6
	0618	SatA3.3	Haipeng Yin	1181	SatB18.37
GuoPing Jiang	0559	SunA16.6		1261	SunA2.12
Guoqiang Ma	0509	SunB18.18		1183	SunB4.11
Guoqiang Wu	1041	SatA8.5	Haiqing Fu	0118	SunA3.1
Guoqiang Zeng	0750	SatA14.2	Haishan Chen	0235	SatB11.4
Guoqing Wang	0130	SatA11.3	Haitao Fang	0823	SunB15.9
Guowei Pan	0908	SunB4.6	Haiyan Tu	0520	SunA8.5
Guoxing Chen	1005	SunB11.11	Haiyang Li	1037	SunA14.9
Guoxu Qin	0595	SatB14.7	Haiyin Piao	0116	SatA5.1
Guoyao Zhang	1058	SunB15.11	Haiying Liu	0446	SunA7.3
	H			0568	SunB7.5
Hai Yu	0670	SunB10.7	Haiyong Wang	0455	SunB14.5
	0796	SunB10.9	Haiyue Li	0070	SunA10.1
Haibin Cheng	0113	SunA16.1	Han Liu	0258	SatA8.2
Haibin Duan	1264	SatB18.44	Han Miao	1132	SunA8.10
	1309	SunB9.11	Han Wu	1336	SunA8.12
	0613	SunA18.18	Hanchen Lu	1127	SatA18.37
Haibin Zhao	0194	SunB18.4	Hang Chen	0726	SatB3.9
Haibo Guo	1144	SunA7.10	Hang Dai	0609	SunA4.5
	1252	SunA7.12		0604	SatA18.5
	1004	SunB7.11	Hang Du	1127	SatA18.37
	0433	SunA10.6	Hang Feng	0994	SatB18.30
Haibo Ji	0575	SunA8.6	Hang Xiao	1179	SatA18.38
Haichao Gui	1113	SunB18.40	Hang Zhang	1324	SunB9.12
	1121	SunA10.11	Hangxu Li	0988	SunB4.7
Haichao Zhang	0338	SatB4.1	Hangyu Dai	0270	SatB16.1
Haidong Shen	0851	SunB8.7	Hannes Hofsaess	0267	SunB4.3
	1351	SunB8.12	Hanqiong Liu	0841	SatA3.4
Haifeng Huang	0803	SatB18.24	Hanyu Qian	0627	SatA18.23
Haifeng Li	1237	SatA12.11	Hanyu Zhang	1056	SunA3.6
	0822	SunA13.8		1054	SunA10.9
Haifeng Wang	0331	SunB16.1	Hao Bai	0249	SunB8.1
Haifeng Zhang	1079	SatB16.7	Hao Chen	0215	SunB15.1
Haikuo Liu	0379	SunB5.4	Hao Dai	0622	SunB10.6
Hailei Wu	0339	SatB3.5	Hao Ding	1297	SunA5.11
	0618	SatA3.3		1348	SunA5.12
Hailian Huang	1344	SatA4.12		0772	SunA7.9
Hailiang Liu	0632	SatA13.8	Hao Dong	1112	SatA18.36
	1181	SatB18.37	Hao Jiang	0653	SunB2.4
Hailong Wei	0788	SatB14.8	Hao Li	0634	SatB15.4
Haiming Tian	1090	SatA18.34		0783	SatB15.7

	0701	SatB15.5	Haonan Xu	1159	SatB13.11
Hao Liu	0736	SatB3.10	Haoping Zhang	0545	SunB18.20
	0863	SatA19.9	Haoqian Huang	1061	SunA10.10
	0520	SunA8.5	Haoran Gong	0983	SunB13.10
	0556	SunB3.1		0989	SunB13.11
	0807	SunB3.3	Haoran Zhang	0502	SatA16.9
	1111	SunB8.9	Haosheng Sun	0527	SunA7.5
	0553	SunB10.4	Haosong Yue	0485	SunB4.4
	0778	SunA18.20		0590	SatB14.6
Hao Lu	0113	SunA16.1	Haotian Li	0667	SunA9.2
	0390	SunB5.5	Haotian Yang	0218	SatA4.1
	0932	SunB5.9	Haoting Wu	0561	SunB11.5
Hao Meng	0146	SatB17.3	Haowen Zhang	0095	SunB11.1
Hao Pan	0890	SunB3.5	Haoxue Li	0846	SatB18.26
Hao Qiao	1287	SunB6.12		0746	SunA4.7
Hao Qu	1141	SunA8.11		0743	SunB15.8
	1209	SunB2.10		0558	SatA18.22
Hao Ren	0546	SatA19.2		0407	SunB15.5
Hao Su	1276	SunA14.11	Haoyu Zhai	0348	SunB14.1
Hao Wei	0541	SunA14.4	He Chen	0527	SunA7.5
Hao Wu	1061	SunA10.10	He Dong	0840	SunB16.7
Hao Yang	0583	SatB12.6	He Huang	1172	SunA18.39
	0135	SunA6.1	He Zhang	0569	SunA7.7
	0353	SunB18.12		0293	SunB7.2
Hao Yu	0061	SatB18.1	Hecheng Wu	1131	SunA5.9
	0948	SunB16.10		0355	SunA5.2
Hao Yun	0392	SunB18.14	Helu Zhou	0905	SunB2.8
Hao Zhang	1318	SunA1.12	Heming Jia	0119	SatB18.4
	0534	SunB5.6		0976	SunB6.7
	1113	SunB18.40		1222	SunB6.11
	1352	SunA18.45		0472	SunA18.13
Hao Zhou	0471	SatA18.20	Heng Wang	0180	SatA3.1
Haoan Wang	0866	SatB1.9	Heng Zhang	0496	SatB2.5
	0570	SunA1.3	Hengjie Gao	0948	SunB16.10
	0561	SunB11.5	Hengtao Wu	0407	SunB15.5
Haochang Tian	0477	SunB18.16	Hengyong Xiang	0117	SatB9.1
Haochun Miao	0499	SatA10.2	Hengyu Liu	1173	SatB5.12
Haodong Li	0849	SatB9.9		1308	SatA5.12
	0687	SatA9.5	Heqi Li	0230	SatA19.11
Haojie Lu	0318	SatB9.4	Hexiang Wang	0480	SunB18.17
Haojie Zhang	0713	SatB9.8	Hongwei Zheng	0938	SatA7.6
Haolan Chen	1353	SatB11.12	Hong Jiang	0101	SatA7.1
Haoling Yin	1273	SatB18.45		1205	SatA7.12
Haomiao Wang	1264	SatB18.44	Hong Pei	1331	SunB18.47
Haonan Tang	0632	SatA13.8	Hong Shen	0452	SunA13.2

Hong Tao	0903	SatA2.9	Hongwei Han	0716	SatB4.7
Hong Zhang	0290	SunA7.2	Hongwei Liu	0483	SunA11.3
	0839	SunB7.9	Hongwu Guo	0801	SunA18.21
	1004	SunB7.11	Hongxi Zhou	1030	SunA18.33
Hong Zhu	0227	SunB13.3	Hongxin Wang	1088	SatB6.8
Hongbao Zhu	0554	SatB12.5	Hongxu Zhu	0582	SunA3.3
Hongbin Li	0449	SunA18.10	Hongxuan Song	1255	SatA18.41
	0443	SatA18.19		0667	SunA9.2
Hongbo Chen	1185	SatA9.8	Hongyan Ma	0571	SunB17.2
	0666	SunA1.4	HongYan Zhang	1126	SatA10.10
	0249	SunB8.1	Hongyang Bai	0674	SatB9.7
	0734	SunB11.8	Hongyang He	0231	SunB13.4
	0733	SunB18.27	Hongyin Zhao	0707	SatB15.6
	0646	SatA1.7	Hongyong Yang	0447	SatA15.2
Hongbo Lei	0821	SatA10.5	Hongyuan Wang	0286	SatA18.12
Hongbo Wang	0967	SatB2.9	Hongzeng Li	0929	SatB4.11
Hongbo Zhang	0860	SatB11.10	Hongzhou Chai	0978	SunB9.5
	1063	SatB12.10		0944	SunA9.7
	1008	SatB18.32	Housheng Su	0234	SunA16.2
Hongcheng Li	1190	SunB8.10		0265	SunA16.3
	0931	SunB10.12		0233	SatA18.1
Hongcheng Xiang	0844	SatA18.29	Hua Chai	1167	SatA3.10
Hongfa Wan	0529	SunA11.4	Hua Li	0891	SunB18.32
Hongfen Chen	1072	SatA11.7	Hua Liu	1087	SatB18.34
Honghong Li	0181	SunA4.2	Hua Zhai	0433	SunA10.6
Honghua Rao	1222	SunB6.11	Hua Zhang	0312	SatB9.3
Hongji Zeng	1180	SunA16.9	Huaining Wu	0726	SatB3.9
Hongjun Pang	0165	SatB2.1		0731	SunB1.5
	0159	SatA2.1	Huaju Liang	0674	SatB9.7
	0166	SatA2.2	Huaming Qian	0103	SunB12.1
Hongke Dong	1070	SatB2.10		0262	SunA14.3
Honglei Che	0732	SunA9.3	Huan Gao	0223	SatB18.8
	0911	SunA9.5		0274	SunA2.2
	1320	SunA9.12		1033	SunB18.38
Honglei Yang	1334	SunB7.12	Huan Huang	0175	SunB13.2
Honglian Gao	0864	SatB12.8		0366	SunB13.5
Hongliang Yin	1012	SunB9.6		0487	SunB16.2
Hongliang Yuan	0513	SatA18.21	Huan Song	0257	SunB18.9
Honglin Liu	1069	SatB8.8	Huanhuan Chen	0736	SatB3.10
Honglun Wang	1020	SatA14.5		0737	SatB3.11
	1025	SatA14.6		0965	SatB3.12
Hongmei Liu	0799	SatB17.7	Huanyu Li	0201	SatA16.3
Hongpo Fu	1146	SatA18.7	Huapeng Wang	0538	SatB4.4
Hongqian Lu	0319	SatA8.3	Huawei Hu	0979	SunA18.31
Hongtao Gao	1091	SatA11.10	Huaxing Xu	0341	SatA16.5

Huayi Li	0104	SunA7.1		0466	SunA18.12
	0920	SunB7.10		0759	SunA11.6
Hugh Liu	0765	SatA9.6	Jia Wu	1107	SunB18.39
Hui Li	1079	SatB16.7	Jia Zhang	0263	SunA17.3
	0140	SunA15.1	Jiaao Yang	1191	SunB1.11
Hui Liu	0338	SatB4.1	Jiacheng Chen	1176	SunA2.11
Hui Shao	0150	SatB13.2	Jiacheng Li	0921	SatB15.8
	0533	SatB13.7	Jiadong Yang	1078	SatA11.8
Hui Sun	0877	SunA18.23	Jiafu Xiong	0486	SatB6.2
Hui Xiong	0224	SatA1.1	Jiahao Gan	1032	SunB3.8
	1210	SunA18.41		1034	SunB3.9
Hui Ye	0417	SatA1.4	Jiahao Wang	0386	SunB18.13
Hui Yu	0382	SatA13.5	Jiahe Li	0419	SatB12.4
	0759	SunA11.6	Jiahe Shen	1060	SatA14.7
Hui Zhang	0744	SatB18.23	Jiahong Song	1204	SatA11.12
Hui Zhao	0409	SunA10.5	Jiajia Zhao	0081	SunA18.2
Huifeng Feng	0481	SunA12.2	Jiaju Wu	0173	SunB10.1
Huihui Zhang	0934	SatB18.28	Jiakun Du	1033	SunB18.38
Huijie Zhu	0483	SunA11.3	Jiale He	0895	SunA2.7
Huijin Fan	0089	SatA11.1	JiaLin Qi	0101	SatA7.1
Huiliao Yang	1294	SatA9.12		1205	SatA7.12
Huimin Zhao	0691	SunA6.9	Jialong Zhu	0453	SatB3.7
Huiru Zhu	0367	SunA18.9	Jiamin Fan	0394	SatB9.5
Huixia Wang	1313	SatB16.11	Jiaming Cai	0829	SunB10.11
Huixin Yang	0655	SunB18.25	Jiaming Lu	0702	SunB10.8
Huiyong Liang	0213	SatA18.10	Jiaming Wang	0288	SatB18.11
Huiyuan Zhang	0196	SunB9.1	Jian Chen	0774	SunA5.3
Huizhen Yu	0254	SatA7.2		0776	SunA5.4
Humin Lei	0208	SatA13.4		0789	SunA5.5
Huobin Tan	0152	SunB4.1		0215	SunB15.1
I			Jian Huang	0822	SunA13.8
				0705	SatB12.7
				0907	SunA14.7
				0182	SatA16.2
Ji Zhang	1346	SunA14.12	Jian Liao	0794	SatB1.8
Jia Chun	1266	SunB14.11	Jian Ma	0631	SatB4.6
Jia Li	1168	SatA5.11		0716	SatB4.7
	0247	SatB14.2		0799	SatB17.7
Jia Liu	0579	SatB4.5		0785	SatA4.6
Jia Qi	1066	SatA4.10		0964	SatA10.7
Jia Song	0700	SunB6.2			
Jia Wang	1060	SatA14.7			
	0297	SatB1.3			
	0465	SunA18.11	Jian Meng		

Jian Shi	0207	SatB2.2		1048	SunA11.10
Jian Xue	0998	SunA14.8	Jiangang Li	0153	SunB18.2
	1276	SunA14.11	Jiangbin Zheng	1324	SunB9.12
Jian Yang	1269	SatA9.11	Jiangfeng Ji	1090	SatA18.34
	1250	SatB7.11	Jiangfeng Wang	0106	SatA13.1
Jian Zhang	1126	SatA10.10	Jianglong Yu	0938	SatA7.6
Jianan Wang	1079	SatB16.7		0958	SatA7.8
	0578	SatA9.3		1200	SatA7.11
	0616	SatB16.4		1205	SatA7.12
	1313	SatB16.11		0462	SatB7.3
	0637	SatB16.5		0689	SatB7.8
Jianbo Shao	0766	SunB5.8		0943	SatB7.9
Jianchao Zhang	0951	SunB11.10		0947	SatA7.7
Jiancheng Zhang	0285	SunB18.10		0704	SunA11.5
Jianchuan Ye	0933	SunA8.9	Jiangning Xu	0231	SunB13.4
	1132	SunA8.10	JiangPeng Liang	0070	SunA10.1
Jiancong Wang	0198	SatB18.7	Jiangrong Li	0358	SunA1.1
Jianda Han	0670	SunB10.7	Jiangtao Li	0989	SunB13.11
	0796	SunB10.9	Jianguo Guo	0461	SunA13.3
	0798	SunB10.10		0130	SatA11.3
Jianfei Zheng	1331	SunB18.47	Jianguo Yan	0576	SunB10.5
Jianfu Zhang	1285	SunA10.12	Jiangxin Xu	1228	SatA1.12
Jiang Chang	0499	SatA10.2	Jiangyuan Tian	0363	SatA16.6
Jiang Lou	1287	SunB6.12		0387	SatA16.7
Jiang Shao	1010	SunB8.8		1349	SunA16.12
Jiang Wang	0821	SatA10.5	Jianhai Zhang	0297	SatB1.3
	0928	SunA16.7		0408	SatB1.5
	0883	SatA18.31		0846	SatB18.26
Jiang Zhao	0258	SatA8.2		0746	SunA4.7
	1143	SatA8.7		0984	SunA6.11
	0437	SatA18.46		0465	SunA18.11
	0154	SatB8.1		0466	SunA18.12
	0438	SatB8.2		0743	SunB15.8
	0459	SatB8.3		0985	SunB18.33
	1021	SatB8.7		0759	SunA11.6
	1134	SatB8.10	Jianhui Zhao	0643	SunB17.4
	1138	SatB8.11	Jiani Zhou	0432	SatA1.5
	1119	SunA4.12	Jianjun Luo	1237	SatA12.11
	1047	SunA11.9	Jiankang Li	0693	SatA15.5
	0100	SatA8.1		0729	SatA15.6

Jianli Li	0991	SatB18.29	Jiarui Cui	1085	SunB9.8
Jianli Song	0949	SunA5.6	Jiarui Ma	0666	SunA1.4
Jianliang Ai	0500	SatA13.6	Jiashan Cui	0591	SunA18.17
	0721	SatA13.9	Jiashuai Si	0292	SunB15.2
	1039	SatA13.12	Jiawang Wang	1100	SunA1.10
	1043	SunB1.9		1101	SunA1.11
	0636	SunB8.3	Jiawei Zhang	1245	SunA3.11
Jianlin Shi	0734	SunB11.8		1290	SunA3.12
	0251	SunB18.8	Jiaxiang Liu	0933	SunA8.9
Jiannan Zhang	0541	SunA14.4	Jiaxin Hu	0175	SunB13.2
Jianping Huang	1245	SunA3.11		0366	SunB13.5
	1290	SunA3.12	Jiaxin Li	1041	SatA8.5
Jianqi Li	0553	SunB10.4	Jiaxin Tang	1339	SatB14.12
Jianqiang Zhang	0480	SunB18.17	Jiaxin Yan	1091	SatA11.10
Jianquan Wang	1145	SatA8.8	Jiaxing Wang	0392	SunB18.14
Jianshe Wu	0983	SunB13.10		0426	SatA5.5
Jiansheng Shu	0257	SunB18.9	Jiaxu Li	0652	SunA6.7
Jiantao Shi	0377	SatB4.2	Jiaxuan Xie	0209	SatA2.4
Jianwei Liu	0649	SunB7.7		1221	SatA2.11
Jianwen Huang	0622	SunB10.6	Jiayang Zhou	0232	SatB11.3
Jianwen Huo	0312	SatB9.3		0089	SatA11.1
	0394	SatB9.5		0114	SatA11.2
Jianwen Zang	1111	SunB8.9	Jiayi Chen	0383	SatB7.2
Jianxin Ren	0583	SatB12.6	Jiaying Gao	0082	SatB10.1
Jianxin Zhou	1006	SatA15.11	Jiayu Chang	0465	SunA18.11
Jianxiong Wei	0766	SunB5.8		0466	SunA18.12
Jianxuan Fan	1020	SatA14.5		0824	SatA18.28
Jianxun Jiang	0139	SunA14.2	Jiayu Chen	0995	SunB18.34
Jianye Liu	0196	SunB9.1	Jiayuan Shan	0578	SatA9.3
	1329	SunB12.11		1208	SunB6.10
Jianying Zheng	0143	SunA10.3	Jiayun Wen	0783	SatB15.7
Jianzhong Yang	0662	SunB18.26	Jiayun Zou	0105	SunB5.1
	1107	SunB18.39	Jiazhao Yin	1166	SatA3.9
Jiaqi Chen	0391	SatA18.16	Jibo He	0595	SatB14.7
Jiaqi Liu	0821	SatA10.5	Jicheng Ding	0353	SunB18.12
	1003	SatA10.8	Jichuan Huang	0116	SatA5.1
Jiaqi Shi	0714	SunA18.19	Jie Lian	0692	SunB7.8
Jiaqi Wei	0385	SunB12.3	Jie Wang	0160	SunB5.2
Jiaqi Xu	1161	SatA10.11		0272	SatA4.2
Jiarong Han	0644	SunB17.5		0986	SunA13.10

Jie You	0864	SatB12.8		1227	SatA18.39
Jie Zhang	0361	SatB14.5	Jingji Wang	0061	SatB18.1
Jie Zhong	0496	SatB2.5	Jing Ni	0508	SatA18.3
Jifu Wen	0732	SunA9.3	Jing Wang	0456	SunB18.15
Jihang Yang	0389	SunB15.4		0907	SunA14.7
Jin Dong	1205	SatA7.12	Jing Wen	0220	SatB13.4
Jin Chang	0284	SatA12.4	Jing Xin	0635	SunA6.5
Jin Hou	0698	SatA18.25	Jing Yang	0589	SatA10.3
Jin Huang	1077	SatA10.9	Jing Zhang	1125	SatB15.11
Jin Liang	0542	SunB16.4		0805	SunA1.6
Jin Liu	0350	SatB14.4		0485	SunB4.4
Jin Tang	0885	SatB10.9		0590	SatB14.5
Jin Wang	1267	SunA9.11		0806	SunA2.6
Jin Xiao	0653	SunB2.4		0814	SunA9.4
	0675	SunB2.5	Jing Zhao	0242	SatB1.2
	0160	SunB5.2	Jing Zhu	1230	SatB1.12
	0654	SunB11.6		1231	SatB16.10
	0714	SunA18.19		0195	SunA18.5
Jin Yu	0989	SunB13.11	Jingchao Jia	0732	SunA9.3
Jin Zhang	0876	SatA16.11	Jingchao Zhao	1178	SatB11.11
	1056	SunA3.6	Jingcheng Zhang	0816	SatA8.4
	1054	SunA10.9	Jingchun Li	1309	SunB9.11
	1030	SunA18.33	Jinghua Zhou	0277	SunA17.4
Jin Zhu	0902	SunA14.6	Jinghui Zhang	0750	SatA14.2
Jinbo Wang	0750	SatA14.2	Jingliang Sun	0696	SatB10.5
	0666	SunA1.4		0977	SatB10.10
	0249	SunB8.1		1029	SatB10.11
	0734	SunB11.8	Jinglong Cao	0653	SunB2.4
	0251	SunB18.8	Jingping Shi	0076	SatB5.1
	0733	SunB18.27		0131	SatB5.2
	0646	SatA1.7		0314	SatB5.3
Jincheng Zhang	0435	SatA10.1		0321	SatB5.4
Jincheng Zhu	0415	SatB12.3		0347	SatB5.5
Jindong Zhu	0201	SatA16.3		0190	SatA5.2
Jing Cao	0070	SunA10.1		0216	SatA5.3
Jing Dong	0082	SatB10.1		0426	SatA5.5
	0081	SunA18.2	Jingqi Duan	0365	SatB13.5
Jing Guo	0998	SunA14.8		0523	SunB7.4
Jing Huang	1234	SatB18.41	Jingren Hou	0907	SunA14.7
	0121	SunA2.1	Jingting Li	0500	SatA13.6

	0721	SatA13.9		0636	SunB8.3
	1039	SatA13.12	Jinyi Yang	1333	SunB14.12
Jingguo Liu	0915	SatB14.9	Jinyong Chen	1084	SatB14.11
Jingwang Li	0265	SunA16.3		0361	SatB14.5
Jingwei Lv	0152	SunB4.1	Jinzhan Gou	0331	SunB16.1
Jingwei Yu	1074	SunA4.10	Jinzhen Liu	1210	SunA18.41
Jingwen Huang	0796	SunB10.9	Jinzhen Mu	0384	SatB3.6
Jingwen Lv	0533	SatB13.7	Jiping Han	0778	SunA18.20
Jingxiu Zhang	0320	SatA15.1	Jiuqing Wan	0270	SatB16.1
Jingyan Wang	1024	SunA3.5	Jiuxiang Dong	0526	SatB1.6
	1038	SunB3.10	Jixing Hao	0744	SatB18.23
	1340	SatA18.44	Jizhou Lai	0924	SatB4.10
Jingyi Fu	1093	SatB13.10		0450	SunA7.4
Jingyi Xing	1344	SatA4.12		0809	SunB12.6
Jingyu Shi	0243	SatA19.4		0431	SatA9.2
Jingyun Luo	1211	SatB18.39	Ju Wen	0927	SatB18.27
Jingzhong Zheng	0243	SatA19.4	Juan Li	0341	SatA16.5
Jinhan Wang	0632	SatA13.8	Juan Qian	0559	SunA16.6
Jinhu Lv	0863	SatA19.9	Juliang Cao	0535	SatB18.17
Jinhu Zhang	0538	SatB4.4	Jun Cheng	0510	SunA12.4
Jinhua Sun	0623	SunA3.4		0626	SunA12.6
Jinhui Liu	0105	SunB5.1		0842	SunA12.10
Jinhui Zeng	1115	SunA16.8		0852	SunA12.11
Jinjie Huang	0615	SunB18.23	Jun Du	0954	SatA5.7
Jinjin Xie	0457	SunA3.2	Jun Fang	0093	SatA16.1
Jinjing Wang	0639	SunB2.3		1162	SatB16.8
Jinli Suo	1236	SatA19.14	Jun Hu	1216	SunB11.12
	1263	SunB2.11		1202	SunA18.40
Jinliang Zhang	0283	SatA12.3	Jun Li	0283	SatA12.3
Jinlong Huang	0832	SunB3.4		0856	SunB13.8
Jinlong Song	1210	SunA18.41		0996	SunB15.10
Jinming Hao	0299	SatB18.12		0834	SatA4.8
Jinming Li	0877	SunA18.23	Jun Liu	0385	SunB12.3
Jinpeng Yang	0409	SunA10.5		0759	SunA11.6
Jinpeng Zhang	1306	SunA11.12	Jun Luo	0252	SatA12.2
Jinping Jia	0622	SunB10.6		0284	SatA12.4
Jinping Li	0499	SatA10.2	Jun Ma	1249	SatA9.9
Jinsong Yu	1036	SunA11.8	Jun Mao	1141	SunA8.11
Jinwei Zhao	1145	SatA8.8		1209	SunB2.10
Jinyi Ma	1043	SunB1.9	Jun Sun	0530	SatB9.6

Jun Tang	0385	SunB12.3	Junyu Yang	0513	SatA18.21
Jun Wang	1218	SatB18.40	Junzhi Li	0696	SatB10.5
Jun You	0876	SatA16.11		0977	SatB10.10
Jun Zhang	1082	SatB6.7		0752	SunB1.6
	0223	SatB18.8	Junzhi Yu	0490	SatA19.7
	1318	SunA1.12	K		
Jun Zhou	0130	SatA11.3	Kai Chen	0300	SatA18.14
Jun Zhu	1024	SunA3.5	Kai Du	0070	SunA10.1
Junan Li	1216	SunB11.12	Kai Li	1156	SatB15.12
Junbin Guo	0804	SunB12.5	Kai Liu	1069	SatB8.8
Junchao Li	0964	SatA10.7		1145	SatA8.8
Junhui Liu	1208	SunB6.10		1169	SatA8.10
Junjian Ren	0884	SunA6.10		1194	SatA8.11
Junjie Gao	1206	SunB6.9	Kai Shen	0243	SatA19.4
Junjie Zhou	0448	SunB14.4		0304	SatA17.1
Junkun Yan	0483	SunA11.3	Kai Wang	0089	SatA11.1
Junling Gao	0963	SatA18.33		0114	SatA11.2
Junlong Li	0486	SatB6.2		0232	SatB11.3
	0820	SatB10.7	Kai Xiao	0804	SunB12.5
Junqiang Liu	0746	SunA4.7	Kai Xue	0869	SunB2.7
	0984	SunA6.11	Kai Zhang	0587	SatA18.4
Junrui Shen	0449	SunA18.10		0588	SatB7.7
	0443	SatA18.19	Kai Zhao	0700	SunB6.2
Junruo Sun	1343	SunB12.12	Kaidan Li	0637	SatB16.5
Junshuai Sun	0322	SatB18.14	Kaidi Jin	0944	SunA9.7
	0934	SatB18.28	Kaifeng Wang	0333	SatA18.15
Juntao Zhang	1162	SatB16.8	Kaihang Zhang	0441	SunA15.4
Junwei Wang	0383	SatB7.2	Kaijia Xue	0778	SunA18.20
	0950	SunB9.4	Kailun Cui	1206	SunB6.9
Junwei Wu	0309	SunA18.7	Kaixin Luo	1141	SunA8.11
Junxi Tian	1078	SatA11.8	Kaiyan Niu	0425	SunA1.2
	0661	SunA2.3	Kan Yang	1160	SunA13.11
	0926	SatA11.6	Kan Zheng	1091	SatA11.10
Junxiang Bai	1076	SunA18.36	Kang Ma	1343	SunB12.12
Junxiang Zhao	0869	SunB2.7	Kang Song	1303	SunB5.12
Junxiao Bao	0544	SunB18.19	Kang Wu	0604	SatA18.5
	1112	SatA18.36		0609	SunA4.5
Junxiong Yin	0061	SatB18.1		1015	SunA4.9
Junyan Wang	1294	SatA9.12	Kangjian Shi	0617	SunA12.5
Junyang Zhao	1007	SatB12.9	Ke Fang	0661	SunA2.3

Ke Guo	1072	SatA11.7	Kui Chen	0484	SunB9.2
	1201	SatA11.11	Kui Li	0979	SunA18.31
	1204	SatA11.12	Kun He	0345	SunB15.3
Ke Li	0815	SatB8.4	Kun Jia	0957	SatB2.8
	0816	SatA8.4	Kun Li	0865	SatA2.8
Ke Liu	1141	SunA8.11	Kun Liu	0547	SatA19.8
Ke Lu	0998	SunA14.8	Kun Wang	1137	SatB12.11
Ke Ma	1344	SatA4.12	Kun Wu	0437	SatA18.46
Ke Zhang	0287	SatA19.5		0438	SatB8.2
	0336	SunB1.2		1180	SunA16.9
	0349	SatB1.4		1229	SunA17.12
	0852	SunA12.11	Kun Yan	0278	SatA1.2
	0876	SatA16.11		0708	SatB10.6
	0334	SatB10.3		0769	SatB4.9
Kebo Li	0847	SatB10.8	Kunhu Kou	0656	SunA12.8
	0885	SatB10.9	Kunhui Feng	0642	SatA6.9
	0937	SunA18.28	Kunpeng Li	1180	SunA16.9
Kecheng Li	1013	SatA5.8		L	
Kedong Wang	0424	SunB14.3	Laifa Tao	0579	SatB4.5
	0448	SunB14.4		0799	SatB17.7
	0475	SunB14.6		0811	SatA4.7
	0536	SunB14.7		0882	SatA4.9
Kefan Wu	1339	SatB14.12	Lan Yang	0406	SunA11.2
Keke Lu	0656	SunA12.8	Lanlan Zhou	0891	SunB18.32
Kemao Wang	1030	SunA18.33	Lanyong Zhang	0345	SunB15.3
Kepu Song	0552	SatB15.3	Le An	0438	SatB8.2
Keqi Wei	0122	SatA9.1	Lei Cheng	0085	SatA6.1
Keqiong Jia	0625	SatA6.8	Lei Cui	0094	SatA6.2
Keren Dai	0293	SunB7.2	Lei Feng	1062	SatA14.8
Kewei Xia	0616	SatB16.4	Lei Guo	1269	SatA9.11
	0637	SatB16.5		1250	SatB7.11
Kewen Lu	0329	SatA12.5	Lei Han	0800	SatA9.7
Kexiang Duan	1153	SatB5.10	Lei Jiang	0686	SunA14.5
Kexin Zhu	1304	SatA18.43	Lei Liu	0232	SatB11.3
Keyong Li	1077	SatA10.9		0089	SatA11.1
Kezhi Zhang	0150	SatB13.2		0114	SatA11.2
Konstantin A. Neusypin	0243	SatA19.4	Lei Ning	0497	SatB3.8
	1226	SatA17.10		0551	SatA3.2
Kuai Yu	1289	SunA13.12	Lei Shao	0208	SatA13.4
Kuanrong Hu	0435	SatA10.1	Lei Shi	0824	SatA18.28
			Lei Su	0314	SatB5.3

	0216	SatA5.3	Liangdong Wen	0861	SunB16.8
Lei Sun	1256	SunA14.10	Lianghui Tu	0087	SunA10.2
Lei Wang	0182	SatA16.2	Liangliang Peng	0671	SatA17.3
	1178	SatB11.11	Liangtian Wan	0639	SunB2.3
	0138	SatA18.9	Liangyin Zhong	0266	SatA19.12
Lei Xie	0831	SatA15.10	Liangyu Zhao	0651	SatA10.4
Lei Zhang	0721	SatA13.9	Liaoni Wu	0189	SunA18.4
	0996	SunB15.10		0205	SunB7.1
Leping Yang	0366	SunB13.5		0248	SunB10.2
	0888	SunA11.7		0241	SunA8.1
Leyu Chen	1121	SunA10.11	Libin Li	0416	SatA18.17
Li Chen	0238	SatB11.5		1159	SatB13.11
Li Dai	0327	SunA8.2		1128	SatB18.35
Li Fu	1226	SatA17.10	Lidan Xu	0390	SunB5.5
Li Li	0714	SunA18.19	Lifan Zhou	1292	SunB3.11
Li Liang	0578	SatA9.3	Lihao Wang	0478	SunB15.7
Li Liu	1185	SatA9.8	Lihong Li	0791	SunB6.3
Li Wang	1276	SunA14.11	Lihua Cai	0429	SatA18.18
Li Yang	0888	SunA11.7	Lijia Cao	0719	SunB17.7
Li Zhang	0500	SatA13.6	Lijia Ge	1099	SatA18.6
	1039	SatA13.12		1098	SunA9.9
Li Zhao	0492	SunA12.3	Lijun Ye	0623	SunA3.4
Lianbo Yu	0692	SunB7.8	Lijun Zhang	0187	SatB3.1
Liang Gao	1117	SunA18.38		0879	SatA3.5
Liang Hou	1137	SatB12.11		0936	SatA3.7
Liang Ma	0579	SatB4.5		1035	SatA3.8
Liang Qin	0343	SunA18.8	Likun Li	0831	SatA15.10
Liang Wang	1039	SatA13.12	Likun Sun	0224	SatA1.1
Liang Xu	1086	SatB8.9	Lili Tang	1321	SunA16.11
	1080	SatB5.9	Lili Zheng	0437	SatA18.46
	1268	SatA8.12		0438	SatB8.2
Liang Yan	1099	SatA18.6	Lilian Zhang	1234	SatB18.41
	0400	SunA9.1		1227	SatA18.39
	1098	SunA9.9		1141	SunA8.11
	1267	SunA9.11	Limeng Zhao	0382	SatA13.5
	1320	SunA9.12	Limin Liu	1291	SunA5.10
Liang Yang	0777	SunB3.2		1297	SunA5.11
	1314	SunB3.12		1348	SunA5.12
Liang Zhang	1100	SunA1.10	Liming Wang	0449	SunA18.10
	1101	SunA1.11		0561	SunB11.5

	0443	SatA18.19	Lipeng Wang	0146	SatB17.3
Lin Bin	0613	SunA18.18		0202	SatA13.3
Lin Chen	0378	SunB5.3	Liping Chen	1065	SunA5.7
Lin Kang	0803	SatB18.24	Liping Jing	0907	SunA14.7
Lin Lu	1037	SunA14.9	Liping Yang	0621	SunB7.6
Lin Wang	0298	SunA13.1	Liqiang Liu	1137	SatB12.11
Lin Yang	0665	SatA12.8	Liqiang Teng	0516	SatB2.7
Lin Zhao	0998	SunA14.8	Lisong Wang	1216	SunB11.12
Lina Xu	0285	SunB18.10	Liu Yang	0791	SunB6.3
Lina Zhang	1014	SunB2.9	Liubin Wang	0312	SatB9.3
	1288	SunA15.10		0318	SatB9.4
Linan Wan	0233	SatA18.1		0530	SatB9.6
Linbo Wang	0556	SunB3.1	Liuwei Mao	0237	SunB18.7
Lindong Fan	0180	SatA3.1	Liwen Wang	0935	SatA1.9
Linfei Hou	1041	SatA8.5	Lixia Wei	1254	SatA10.12
Linfeng Su	0251	SunB18.8	Lixin Wang	0632	SatA13.8
	0646	SatA1.7		1181	SatB18.37
Ling Zuo	1124	SatB15.10		1183	SunB4.11
Ling Huang	1110	SatA18.35	Liyao Wang	1030	SunA18.33
Ling Li	1197	SatB16.9	Liyuan Hou	0901	SunB1.8
Ling Wu	0333	SatA18.15	Liyun Fan	1288	SunA15.10
Ling Yang	0415	SatB12.3	Long Sun	0260	SunA10.4
Ling Zuo	0381	SatB15.1	Long Wang	1145	SatA8.8
Lingjuan Miao	0886	SunB12.8	Long Xin	1154	SunA11.11
Lingling Hu	0149	SatB13.1	Long Yan	0483	SunA11.3
Lingling Wang	1301	SatA17.11	Long Zhao	1280	SunB9.10
	1322	SatA17.12		0317	SunB12.2
Lingwei Li	0576	SunB10.5	Longfei Hou	0320	SatA15.1
	0543	SunA7.6	Longfei Yue	1016	SatB8.6
Lingxia Mu	0635	SunA6.5	Longfei Zhao	0378	SunB5.3
Lingxue Zhao	1254	SatA10.12		0682	SunB5.7
Lingyu Yang	0805	SunA1.6	Longhui Zhang	0268	SunA15.2
	0806	SunA2.6		0269	SunA15.3
Linhu Cong	0848	SunB2.6	Longkang Chang	0766	SunB5.8
Linhuang Zhang	1065	SunA5.7	Longsheng Chen	0050	SatB17.1
Linping Feng	0099	SatB18.3		0315	SatA1.3
Linxi Xu	1259	SatA9.10	Longteng Zhang	1074	SunA4.10
	0837	SunA1.7	Longting Jiang	0387	SatA16.7
Linxiao Li	0477	SunB18.16		1349	SunA16.12
Linxin Pan	0531	SunB12.4	Longyang Ding	0705	SatB12.7

Longzhen Hu	0564	SunA13.5	Meijie Liu	0929	SatB4.11
	0594	SunA13.6	Meijie Wu	0127	SatB17.2
Lu Chen	0837	SunA1.7		0699	SatB17.6
Lu Sun	0639	SunB2.3		0371	SunA17.6
	0194	SunB18.4		0372	SunA17.7
Lu Wang	1343	SunB12.12		0420	SunA17.8
	0626	SunA12.6		0599	SunA17.9
Lugang Yuan	0511	SunA18.15	Meiping Wu	0630	SatA18.24
Luhua Zhang	1077	SatA10.9	Meiji Huang	1171	SatA7.10
Lulu Wang	0590	SatB14.6		0532	SatB7.5
Lulu Xue	1342	SunB16.12	Meng Diao	0899	SunA8.7
Lun Fei	1226	SatA17.10		0900	SunA8.8
Lunlong Zhong	0835	SatB17.9	Meng Ge	1289	SunA13.12
	0375	SunB17.1	Meng Liu	1310	SunB2.12
	0887	SunB18.31	Meng Nan	0144	SunB18.1
	0833	SatB17.8	Meng Wang	1225	SunB18.42
Lupeng Song	0297	SatB1.3	Meng Wei	0846	SatB18.26
	1112	SatA18.36		0558	SatA18.22
Luyang Liang	0688	SatB11.8	Meng Zhai	0808	SatA18.27
Luyang Liu	0895	SunA2.7	Meng Zhang	0124	SatA12.1
Luyi Yang	1037	SunA14.9		0685	SatA12.9
M			Mengda Yan	1016	SatB8.6
Man Zhang	0500	SatA13.6	Mengdi Wei	0991	SatB18.29
	0945	SatB8.5	Menghan Shao	0890	SunB3.5
	1018	SatA13.11	Menghao Qian	1258	SatA3.11
Man Luo	0568	SunB7.5	Mengjie Zeng	0921	SatB15.8
Manqiao Wu	1261	SunA2.12	Menglei Tu	1332	SunB8.11
Manruo Luo	1087	SatB18.34	Mengna Liu	1187	SunA7.11
Maopeng Ran	0486	SatB6.2	Mengqi Xue	0513	SatA18.21
	0845	SatB6.6	Mengsi Fu	1201	SatA11.11
	0820	SatB10.7	Mengting Lin	0587	SatA18.4
Maosong Wang	0211	SunA17.1	Mengting Zhang	0685	SatA12.9
	0212	SunA17.2		0285	SunB18.10
	0850	SunB9.3	Mengtong Ren	1320	SunA9.12
	1085	SunB9.8	Mengying Jiang	0310	SatB18.13
Maria Selezneva	1226	SatA17.10	Min Tan	0490	SatA19.7
Mei Yuan	0859	SatB17.10	Min Wang	0978	SunB9.5
	0378	SunB5.3	Min Zhang	0254	SatA7.2
	0682	SunB5.7		0570	SunA1.3
	0512	SunB11.4	Ming Cheng	0556	SunB3.1
Meijia Song	0472	SunA18.13			

	0807	SunB3.3		0397	SunB13.6
	0553	SunB10.4	Mingrui Hao	0707	SatB15.6
Ming Hu	1245	SunA3.11		0434	SatB18.16
	1290	SunA3.12		0337	SunA8.4
Ming Li	0944	SunA9.7		0918	SunA18.27
	0643	SunB17.4		1324	SunB9.12
Ming Liu	0433	SunA10.6		0292	SunB15.2
	0105	SunB5.1	Mingshan Hou	1042	SunA18.34
Ming Yan	1111	SunB8.9	Mingwei Lv	0111	SunB13.1
Ming Yang	0423	SatA11.4	Mingxing Chen	0155	SatB18.5
	0925	SatA11.5	Mingyang Song	0907	SunA14.7
	0926	SatA11.6	Mingyang Zhang	0925	SatA11.5
	0661	SunA2.3		0616	SatB16.4
Ming Zhen	0175	SunB13.2	Mingzhe Hou	0337	SunA8.4
	0366	SunB13.5	Minnan Piao	0822	SunA13.8
	0487	SunB16.2	Minxiang Chen	1275	SatA2.12
Mingbo Teng	0291	SatB9.2	Minzhi Xiang	0944	SunA9.7
Mingchao Yang	0749	SunB8.6		0978	SunB9.5
Mingcheng Liu	0313	SunA16.4	Mohan Hao	0866	SatB1.9
	0482	SunB6.1	Mohan Hua	0455	SunB14.5
Mingchuan Yang	0654	SunB11.6	Mohd Shamrie Sainin	1321	SunA16.11
Mingcun Zhao	0082	SatB10.1	Mou Chen	1147	SatA1.10
Mingguang Wang	1254	SatA10.12		1274	SunB17.9
Minghong Zhu	0484	SunB9.2	Muhammad Baber Sial	0207	SatB2.2
Minghu Tan	0452	SunA13.2	Mujun Xie	0997	SatB18.31
Mingjie Li	0208	SatA13.4	N		
Mingjun Zhao	1031	SunB4.10	Na Duan	0703	SatB18.22
Mingkai Wang	0226	SunB4.2		0550	SunB18.21
	1031	SunB4.10	Na Qin	0359	SatA4.3
Mingliang Bai	0803	SatB18.24	Naizhao Yu	0386	SunB18.13
Mingliang Suo	0811	SatA4.7	Nan Han	0647	SatA15.4
	1344	SatA4.12		0729	SatA15.6
	0799	SatB17.7	Nan Li	0419	SatB12.4
Mingming Tang	0792	SatB11.9		1211	SatB18.39
Mingming Tian	0518	SatB11.6	Nan Liu	0742	SatA12.10
	0749	SunB8.6		1305	SunA18.43
Mingming Wang	1237	SatA12.11	Nan Wang	0582	SunA3.3
Mingqing Lu	1338	SunA15.11	Nana Chu	0993	SunB4.8
	1332	SunB8.11	Nana Wang	0957	SatB2.8
Mingqiu Ren	0793	SatA17.4	Nasi Wei	1315	SunA16.10
			Naxin Wei	1212	SunA15.9

Ni Li	0119	SatB18.4	Peng Liu	1073	SatB5.8
Ning Kang	0322	SatB18.14		0225	SatB11.2
	0323	SunB2.2	Peng Qi	0355	SunA5.2
	1110	SatA18.35	Peng Qin	0124	SatA12.1
	1217	SatA2.10		0685	SatA12.9
Ning Mao	0231	SunB13.4	Peng Shi	0765	SatA9.6
Ning Sun	0527	SunA7.5	Peng Sun	0969	SunA18.29
Ning Tang	1226	SatA17.10	Peng Tan	0449	SunA18.10
Ning Zhang	1173	SatB5.12		0443	SatA18.19
	1084	SatB14.11	Peng Wang	1353	SatB11.12
	1342	SunB16.12		0277	SunA17.4
	0834	SatA4.8		0534	SunB5.6
	1168	SatA5.11		1287	SunB6.12
	1308	SatA5.12		1352	SunA18.45
Ningjun Liu	1134	SatB8.10	Peng Wu	1088	SatB6.8
	1119	SunA4.12	Peng Zhang	0206	SatB3.2
Ningyun Lu	0606	SatB1.7		0726	SatB3.9
Nuo Xu	1249	SatA9.9		0736	SatB3.10
O				0737	SatB3.11
				0965	SatB3.12
P				0833	SatB17.8
Pan Tang	0747	SunA7.8		0835	SatB17.9
Pufang Ma	0075	SunA18.1		0731	SunB1.5
Pan Jiang	0766	SunB5.8		0932	SunB5.9
Panfeng Huang	0303	SatA19.6		0375	SunB17.1
	0453	SatB3.7		0470	SatA4.4
Pei Chi	0437	SatA18.46		1036	SunA11.8
	0438	SatB8.2	Pengchao Shang	0794	SatB1.8
Pei Lei	0934	SatB18.28	Pengcheng Wan	0291	SatB9.2
Pei Liu	0872	SunB16.9	Pengfei Cheng	1162	SatB16.8
Pei Pei	0961	SatA10.6	Pengfei Liu	0934	SatB18.28
Peibo Li	1202	SunA18.40	Pengfei Wang	1109	SunA2.10
Peijun He	1018	SatA13.11	Pengfei Zhi	1000	SunB6.8
Peiran Zhao	0400	SunA9.1	Penghao Qi	1070	SatB2.10
Peiyang Xu	0785	SatA4.6	Pengjie Xiang	1099	SatA18.6
Peizhan Wang	0327	SunA8.2		1098	SunA9.9
Peng Ding	0262	SunA14.3	Pengjin He	0803	SatB18.24
Peng Han	0470	SatA4.4	Pengjun Guo	0659	SatA12.7
Peng Li	0772	SunA7.9	Pengpeng Guo	0788	SatB14.8
	0348	SunB14.1	Pengwei Hu	1269	SatA9.11
	1167	SatA3.10		1250	SatB7.11

Pengyi Hao	0617	SunA12.5	Qian Li	0875	SatA18.30
Pengyu Guo	0731	SunB1.5	Qian Liu	0286	SatA18.12
Pengyu Liu	0410	SatA18.2	Qian Meng	0254	SatA7.2
Pengyu Wang	0695	SatB10.4	Qian Mi	1315	SunA16.10
Piaoyi Su	0938	SatA7.6	Qian Tao	1251	SatA18.40
Pin Lv	0924	SatB4.10	Qian Yang	0878	SunA18.24
	0450	SunA7.4	Qian Zhang	0767	SunA2.4
	0809	SunB12.6		0544	SunB18.19
	0431	SatA9.2		0471	SatA18.20
Pin Wang	1115	SunA16.8	Qian Zhao	1250	SatB7.11
Ping Feng	0736	SatB3.10		1166	SatA3.9
	0737	SatB3.11	Qianchao Gong	1062	SatA14.8
	0965	SatB3.12	Qiang Feng	1310	SunB2.12
Ping Zhang	0849	SatB9.9	Qiang Hao	1260	SatB9.12
Pingan Dai	0875	SatA18.30		1012	SunB9.6
Pinghui Jia	1181	SatB18.37		1181	SatB18.37
	1261	SunA2.12	Qiang Li	1249	SatA9.9
	1183	SunB4.11		1130	SunA5.8
Pingping Qu	0610	SatA7.3	Qiang Liu	0496	SatB2.5
Pinzhao Cao	0692	SunB7.8	Qiang Miao	0120	SatA19.1
Pu Chen	0685	SatA12.9	Qiang Shen	0118	SunA3.1
	0285	SunB18.10		0582	SunA3.3
Q				1118	SunA3.7
Qi Chen	0244	SatB3.3		0664	SunA10.8
Qi Feng	0658	SatB18.21		0117	SatB9.1
	0316	SunB18.11	Qiang Sun	0381	SatB15.1
Qi Jiang	0484	SunB9.2	Qiang Tang	0634	SatB15.4
Qi Li	0961	SatA10.6		0701	SatB15.5
	0966	SatA14.3		0783	SatB15.7
Qi Liu	0887	SunB18.31		1124	SatB15.10
Qi Mao	1195	SunA6.12		0539	SunB16.3
Qi Ming	0886	SunB12.8		0811	SatA4.7
Qi Qi	0688	SatB11.8	Qiang Wang	0882	SatA4.9
	0119	SatB18.4		1159	SatB13.11
Qi Wang	0142	SatB10.2	Qiang Yu	1128	SatB18.35
	0753	SunB16.6		0416	SatA18.17
Qi Zhang	0382	SatA13.5		0645	SunB17.6
	1150	SatB8.12	Qiang Zang	0557	SatB18.19
Qi Zhou	0252	SatA12.2	Qiang Zhang	0407	SunB15.5
Qi Zhu	0216	SatA5.3		0485	SunB4.4
	0131	SatB5.2	Qiang Zhou		
Qian Feng	1343	SunB12.12			

Qiankun Zhang	0978	SunB9.5	Qingji Gao	0642	SatA6.9
Qianqian Cao	0798	SunB10.10		0668	SatA6.10
Qianqian Yang	0184	SatA6.4		1219	SatB6.9
	0186	SatB6.1	Qinglei Hu	0726	SatB3.9
Qianyun Zhang	1149	SunA3.8		0731	SunB1.5
Qibin Zhou	0902	SunA14.6		0143	SunA10.3
Qidan Zhu	0202	SatA13.3	Qingrui Zhou	1010	SunB8.8
Qieqie Zhang	0809	SunB12.6	Qingshuo Gong	0458	SunA15.6
Qieshi Zhang	0510	SunA12.4	Qingxia Qin	0571	SunB17.2
	0626	SunA12.6		1317	SunB17.10
	0852	SunA12.11	Qingxian Jia	0104	SunA7.1
Qihang Li	0979	SunA18.31		0920	SunB7.10
Qijie Chen	0328	SatA16.4	Qingxian Wu	0935	SatA1.9
	0360	SunA12.1		1163	SatA1.11
Qijin Chen	0294	SatB12.2	Qingxiang Wu	0527	SunA7.5
	0705	SatB12.7	Qingxin Liu	0119	SatB18.4
Qijun Luo	1219	SatB6.9		0976	SunB6.7
Qing Fei	1019	SunA18.32		0472	SunA18.13
Qing Gao	0863	SatA19.9	Qingxuan Jia	1303	SunB5.12
	0807	SunB3.3	Qingyu Li	1210	SunA18.41
Qing Li	0788	SatB14.8	Qingyuan Ma	0392	SunB18.14
	0951	SunB11.10	Qingyuan Meng	0546	SatA19.2
	0942	SunA4.8	Qingyuan Xu	0485	SunB4.4
	1160	SunA13.11	Qionghai Dai	1263	SunB2.11
Qing Wang	0335	SunA17.5		1236	SatA19.14
Qing Wei	0330	SatA12.6	Qipeng Wang	0991	SatB18.29
Qing Zhou	0714	SunA18.19	Qirui Zhang	0427	SatA16.8
	0675	SunB2.5		0519	SatA16.10
Qingchao Zhang	1331	SunB18.47	Qiuling Jia	0972	SunB3.6
Qingchun Feng	0222	SunA5.1		0973	SunB3.7
Qingdong Li	1067	SatA7.9		0970	SunB6.6
	1200	SatA7.11		0971	SunA18.30
	0128	SatB1.1		1042	SunA18.34
	0462	SatB7.3	Qixian Zhou	0593	SatB5.6
	0947	SatA7.7		0607	SatB18.20
	0958	SatA7.8	Qixuan Sun	0742	SatA12.10
Qinghua Zeng	1325	SunB12.9	Qiyang Miao	0336	SunB1.2
	1326	SunB12.10	Qizheng Li	0973	SunB3.7
	1329	SunB12.11	Quan Liu	0215	SunB15.1
	1323	SunA18.44	Quan Zou	1123	SatA14.11

	1140	SatA14.12		0779	SatB5.7
Quanyou Yu	0550	SunB18.21		1146	SatA18.7
Qun Zong	0414	SatB4.3	Ruifeng Zhou	0562	SunA6.3
Qun Zuo	0473	SatA5.6	Ruihan Luo	0139	SunA14.2
	R		Ruihang Yu	0535	SatB18.17
Rain Dong	0189	SunA18.4		0630	SatA18.24
Ran Liu	1169	SatA8.10		0908	SunB4.6
Ranlong Xia	1163	SatA1.11		1333	SunB14.12
Ranran Wang	0872	SunB16.9	Ruihua Liu	0125	SatA6.3
Renhao Fu	1339	SatB14.12	Ruihua Yang	0300	SatA18.14
Rennong Yang	1016	SatB8.6	Ruijing Liu	0127	SatB17.2
Rengqin Zhai	0298	SunA13.1		0371	SunA17.6
Rong Wang	0155	SatB18.5		0372	SunA17.7
	0196	SunB9.1		0420	SunA17.8
Ru Zhang	0738	SunB16.5		0599	SunA17.9
Rucai Che	0206	SatB3.2		0699	SatB17.6
Rui Cao	0851	SunB8.7		0786	SunA17.11
	1086	SatB8.9	Ruilin Lv	1055	SunB1.10
Rui Guo	0513	SatA18.21	Ruimin Jiang	0461	SunA13.3
Rui Liu	1285	SunA10.12	Ruipeng Wu	1192	SatA4.11
Rui Lv	1316	SatA3.12	Ruirui Zhang	1065	SunA5.7
Rui Ma	0920	SunB7.10	Ruisheng Sun	1258	SatA3.11
Rui Shu	0104	SunA7.1		1316	SatA3.12
Rui Sun	0619	SunB14.8	Ruitao Chu	0198	SatB18.7
	0722	SunB14.9	Ruitao Li	0678	SunA12.9
Rui Tang	0875	SatA18.30	Ruitong Liu	1058	SunB15.11
Rui Wang	0627	SatA18.23	Ruixuan Wei	0363	SatA16.6
	0877	SunA18.23		0387	SatA16.7
	1069	SatB8.8		0427	SatA16.8
Rui Xu	1323	SunA18.44		0519	SatA16.10
Rui Zhang	0659	SatA12.7		1349	SunA16.12
	0665	SatA12.8	Ruiyang Ban	0778	SunA18.20
	1137	SatB12.11	Ruiyu Bu	0931	SunB10.12
	0486	SatB6.2		1190	SunB8.10
Rui Zhou	0339	SatB3.5	Ruiyun Qi	1122	SatB1.11
	0361	SatB14.5	Ruizhi He	0600	SatB16.3
	0384	SatB3.6		0764	SatA18.26
	1084	SatB14.11	Runchang Hu	0106	SatA13.1
Ruichen He	0267	SunB4.3		0107	SatA13.2
	0988	SunB4.7	Runhao Cui	0479	SunB13.7
Ruichen Ming	0473	SatA5.6			

	1036	SunA11.8	Shaomin Zhang	1221	SatA2.11
Runze Li	0606	SatB1.7	Shaoming He	0928	SunA16.7
Ruochao Huang	1287	SunB6.12		0903	SatA2.9
Ruochen Xue	0327	SunA8.2		0883	SatA18.31
Ruoqiao Guan	1206	SunB6.9	Shaopeng Dong	0378	SunB5.3
Ruoshun Ma	0198	SatB18.7		0682	SunB5.7
RuoXuan Li	0903	SatA2.9		0859	SatB17.10
Ruoyan Hu	1103	SunA4.11	Shaoping Wang	0207	SatB2.2
Ruzhi Zhou	0794	SatB1.8		0495	SatB2.4
	S		Shaoqing Xu	0949	SunA5.6
Sa Liu	0165	SatB2.1	Shaoqing Zhang	0111	SunB13.1
	0166	SatA2.2	Shaoshan Sun	0657	SunB8.4
SALVADOR N.			Shaotao Xiao	1121	SunA10.11
OBAMA OYANA	0856	SunB13.8	Shaoxing Guo	0926	SatA11.6
Sen Yang	0539	SunB16.3	Shaoyu Yang	0338	SatB4.1
Sentang Wu	1156	SatB15.12	Shen Zhang	1139	SatB18.36
Shan Dang	0596	SatB6.3	Shen Zhao	1047	SunA11.9
Shan Huang	0216	SatA5.3	Sheng Quan	0270	SatB16.1
	0131	SatB5.2	Sheng Wang	0980	SunA2.8
	0314	SatB5.3	Shengbao Wu	0899	SunA8.7
Shang Huang	0520	SunA8.5	Shenggang Liu	0282	SunB10.3
Shang Liu	0590	SatB14.6	Shengjie Guo	0671	SatA17.3
Shangbin Zhang	1045	SatA19.13	Shengjun Zhong	0290	SunA7.2
Shanglong Li	1222	SunB6.11		1004	SunB7.11
Shanwen Zhao	1230	SatB1.12	Shengman Hu	0688	SatB11.8
Shanyao Ren	0649	SunB7.7	Shengmin Yue	0801	SunA18.21
Shaobo Zhai	0972	SunB3.6	Shengxin Yu	1144	SunA7.10
	0973	SunB3.7	Shengxing Wei	0834	SatA4.8
	0970	SunB6.6	Shenming Quan	1089	SatA11.9
	0971	SunA18.30	Shi Yan	0343	SunA18.8
	1042	SunA18.34		0481	SunA12.2
Shaochen Li	0964	SatA10.7		0678	SunA12.9
Shaofei Qin	0846	SatB18.26		0956	SunA12.12
Shaofeng Chen	1299	SatA19.10	Shibao Feng	0262	SunA14.3
Shaohua Yang	0742	SatA12.10	Shibin Yang	0555	SatB18.18
	1305	SunA18.43	Shichao Ma	0503	SatB15.2
Shaojie Li	0242	SatB1.2		0634	SatB15.4
Shaojie Wang	0653	SunB2.4	Shichen Fan	0765	SatA9.6
Shaokun Cai	0850	SunB9.3	Shicheng Yu	0505	SunA18.14
Shaolei Zhou	0678	SunA12.9	Shiyao Lin	0821	SatA10.5
Shaomin He	0647	SatA15.4			

	0752	SunB1.6		1071	SatB13.9
Shijie Dai	0490	SatA19.7	Shuai Lv	0598	SunB17.3
Shijie Deng	0359	SatA4.3	Shuai Song	0926	SatA11.6
Shikang Chen	0555	SatB18.18	Shuaijie Qi	1058	SunB15.11
Shilei Zhao	1314	SunB3.12	Shuaipeng Lang	0747	SunA7.8
Shilong Gao	0901	SunB1.8	Shuaipeng Zheng	0506	SunA6.2
Shilong Ji	0459	SatB8.3	Shuaiqi Huangfu	0921	SatB15.8
Shilong Ruan	1178	SatB11.11	Shuaishuai Tian	0995	SunB18.34
Shilu Shen	0070	SunA10.1	Shuaiyang Li	1046	SunA9.8
	0465	SunA18.11	Shuaiyong Zheng	0198	SatB18.7
	0466	SunA18.12	Shuang Li	1306	SunA11.12
Shiping Mao	1175	SunA3.9	Shuang Ma	0271	SunA4.3
Shiqian Liu	0767	SunA2.4	Shuang Zhang	1061	SunA10.10
	1203	SunB1.12	Shuangfei Fu	1150	SatB8.12
Shitong Wei	0505	SunA18.14	Shuanghua Yang	1009	SunB18.35
Shiwei Fan	0484	SunB9.2	Shuanglei Sun	1330	SunB18.46
	1193	SunB9.9	Shubo Wang	0355	SunA5.2
	1286	SatA18.42		1130	SunA5.8
Shiyu Ren	0184	SatA6.4		1131	SunA5.9
	0185	SatA6.5		1297	SunA5.11
	0889	SatA6.11	Shufan Wu	0120	SatA19.1
	0186	SatB6.1		0118	SunA3.1
	0183	SunB18.3		0582	SunA3.3
Shizhen Wu	0670	SunB10.7		1118	SunA3.7
Shouhang Sun	0297	SatB1.3		1149	SunA3.8
	0544	SunB18.19		1175	SunA3.9
Shouyong Peng	0581	SatB11.7		1198	SunA3.10
Shouzhao Sheng	0444	SunA4.4		0664	SunA10.8
	0604	SatA18.5	Shuguang Liu	0954	SatA5.7
	0609	SunA4.5	Shuguang Sun	0596	SatB6.3
	0620	SunA4.6		0191	SatB17.4
	1015	SunA4.9		0511	SunA18.15
Shu Xu	0785	SatA4.6	Shuguang Zhang	0226	SunB4.2
	0794	SatB1.8		0267	SunB4.3
Shu Yang	0162	SatB11.1		0993	SunB4.8
	0141	SunA4.1		1031	SunB4.10
Shuai Chang	0140	SunA15.1	Shuguo Pan	0254	SatA7.2
Shuai Chen	1117	SunA18.38	Shuhua Zheng	0786	SunA17.11
Shuai Chu	0103	SunB12.1	Shujie Xiong	0244	SatB3.3
Shuai Liu	0957	SatB2.8	Shujun Long	0901	SunB1.8

Shunjie Zhang	1082	SatB6.7	Siqi Wang	0460	SunA10.7
Shunmin Li	0139	SunA14.2	Siyuan Liu	1193	SunB9.9
Shuo Song	0961	SatA10.6	Siyuan Yang	0928	SunA16.7
	0966	SatA14.3	Siyuan Zhang	0403	SatB18.15
Shuo Wang	0758	SatA1.8	Song Long	0976	SunB6.7
Shuo Zhang	0633	SatA15.3	Song Wang	1339	SatB14.12
	0403	SatB18.15	Song Xu	0610	SatA7.3
	1279	SunB18.44	Song Zhang	0298	SunA13.1
Shuqiang Zhao	0985	SunB18.33	Songbai Zhang	0719	SunB17.7
Shuqing Cao	0618	SatA3.3	Songlai Han	0082	SatB10.1
	0339	SatB3.5		0081	SunA18.2
	0384	SatB3.6	Songyan Wang	0423	SatA11.4
Shutang Fu	0932	SunB5.9		0925	SatA11.5
Shuwen Dang	0880	SunB12.7		1072	SatA11.7
Shuxin Li	0594	SunA13.6		1078	SatA11.8
Shuxiu Yu	0516	SatB2.7		1089	SatA11.9
Shuya Li	0951	SunB11.10	Songyin Cao	0864	SatB12.8
Shuya Yan	0103	SunB12.1	Sui Xu	1042	SunA18.34
Shuyang Liu	1334	SunB7.12		0973	SunB3.7
Shuyao Zhang	0990	SatA14.4	Sujun Dong	1176	SunA2.11
Shuyi Liu	0778	SunA18.20	Suli Zou	0671	SatA17.3
Shuyi Shao	0432	SatA1.5		0644	SunB17.5
	0935	SatA1.9	Suoxia Miao	0265	SunA16.3
	1147	SatA1.10		0233	SatA18.1
	1163	SatA1.11	Suping Zhao	0278	SatA1.2
Shuzhen Yao	0152	SunB4.1	Suwan Bu	0400	SunA9.1
Si Chen	0241	SunA8.1	T		
Si Shen	0824	SatA18.28	Taifang Li	0702	SunB10.8
Sichen Ji	0769	SatB4.9	Tao Chao	0423	SatA11.4
	0708	SatB10.6		0661	SunA2.3
Sihai Li	0161	SatB12.1		0925	SatA11.5
	0419	SatB12.4		0926	SatA11.6
	0554	SatB12.5		1072	SatA11.7
Sihan Zhang	0512	SunB11.4		1078	SatA11.8
Sijia Zheng	1147	SatA1.10		1089	SatA11.9
Sijin Li	0554	SatB12.5	Tao Feng	0128	SatB1.1
Siling Wang	0769	SatB4.9	Tao Guo	0688	SatB11.8
	0708	SatB10.6		1049	SunB9.7
Simon Hafner	0601	SunB4.5	Tao He	0483	SunA11.3
Siqi Li	1017	SunB18.36	Tao Song	0903	SatA2.9

	0928	SunA16.7	Tianyu Zhao	1325	SunB12.9
	0933	SunA8.9	Tianyuan Li	0512	SunB11.4
	1132	SunA8.10	Tianze Zhou	0313	SunA16.4
Tao Xue	0636	SunB8.3	Tiening Nie	0465	SunA18.11
Tao Zhang	0865	SatA2.8		0466	SunA18.12
Tao Zhao	0332	SunA8.3		0759	SunA11.6
Taotao Liang	0309	SunA18.7	Ting Ding	1170	SunB18.41
Teng Long	0696	SatB10.5		1172	SunA18.39
	0977	SatB10.10	Ting Qin	0483	SunA11.3
	1029	SatB10.11	Ting Song	0497	SatB3.8
Tian Li	0949	SunA5.6		0551	SatA3.2
Tian Qiu	1137	SatB12.11	Ting Wang	1150	SatB8.12
Tian Zhang	0289	SatA18.13	Ting Yang	0162	SatB11.1
Tianbo Deng	0921	SatB15.8	Ting Yue	1183	SunB4.11
Tiancai Wan	0541	SunA14.4	Ting Zhang	0127	SatB17.2
	0831	SatA15.10		0335	SunA17.5
Tianchen Li	0237	SunB18.7		0371	SunA17.6
Tiancheng Wang	0517	SunB1.3		0372	SunA17.7
Tianchun Liaoyang	1257	SunB18.43		0420	SunA17.8
Tianci Li	0804	SunB12.5		0599	SunA17.9
Tianjiang Hu	0122	SatA9.1		0602	SunA17.10
Tianjiao Liang	0331	SunB16.1		0611	SatA17.2
Tianjing Wang	1335	SatA6.12		0699	SatB17.6
Tianli Ma	0569	SunA7.7	Ting Zhao	1304	SatA18.43
Tianliu Wang	0772	SunA7.9	Tinglong Yan	0328	SatA16.4
Tianpeng Huang	0514	SunA13.4		0360	SunA12.1
	0518	SatB11.6	Tingting Bai	0819	SatB18.25
	0872	SunB16.9	Tingting Wang	1217	SatA2.10
Tianqi Qiu	0686	SunA14.5	Tingting Yin	0808	SatA18.27
Tianqi Xia	0125	SatA6.3	Tong An	0235	SatB11.4
Tianru Diao	0183	SunB18.3	Tong Li	1303	SunB5.12
	0184	SatA6.4	Tong Su	0842	SunA12.10
	0185	SatA6.5		0852	SunA12.11
	0186	SatB6.1	Tong Wu	0530	SatB9.6
	0889	SatA6.11		0608	SatA9.4
Tianrui Zhu	0217	SunB18.6	Tong Yan	0686	SunA14.5
Tianwei Pei	0353	SunB18.12	Tong Yang	0449	SunA18.10
Tianyi Wang	1099	SatA18.6	Tonghui Wang	0095	SunB11.1
Tianyou Chen	0653	SunB2.4	Tongle Zhou	1256	SunA14.10
Tianyu Wang	1019	SunA18.32	Tongshuai Li	0315	SatA1.3

Tongxin Shi	0315	SatA1.3	Wei Chen	1258	SatA3.11
Tongyuehao Zhou	1253	SatB7.12		1316	SatA3.12
Tuo Qu	0902	SunA14.6	Wei Cheng	0792	SatB11.9
U			Wei Dong	1079	SatB16.7
				1313	SatB16.11
V			Wei Du	1322	SatA17.12
			Wei Fang	0431	SatA9.2
W			Wei Feng	0832	SunB3.4
Wanbing Zhao	0863	SatA19.9	Wei Gao	0766	SunB5.8
	0807	SunB3.3		1193	SunB9.9
Wanbo Zhu	0854	SunA13.9		1286	SatA18.42
Wanchun Chen	1139	SatB18.36	Wei Han	0787	SatB16.6
	1314	SunB3.12		0986	SunA13.10
	0471	SatA18.20	Wei Hao	0898	SunA18.26
Wanda Zhang	0139	SunA14.2	Wei He	0266	SatA19.12
Wang Gao	0254	SatA7.2		0470	SatA4.4
Wangkui Liu	1178	SatB11.11		1154	SunA11.11
Wanglei Cheng	0349	SatB1.4	Wei Huang	0779	SatB5.7
	0336	SunB1.2		0473	SatA5.6
Wanli Zhang	0932	SunB5.9		1146	SatA18.7
Wanli Zhao	0895	SunA2.7	Wei Jiang	0076	SatB5.1
	1295	SunA18.42	Wei Lan	1229	SunA17.12
Wanlong Zhao	1058	SunB15.11	Wei Li	0252	SatA12.2
Wanlu Zhu	1000	SunB6.8		1181	SatB18.37
Wanmai Yuan	1045	SatA19.11		1261	SunA2.12
	0075	SunA18.1		1183	SunB4.11
Wanqiang She	1040	SatA5.9	Wei Liu	0518	SatB11.6
Wanqing Wu	0840	SunB16.7		0514	SunA13.4
Wanqing Xin	1327	SunB16.11		0749	SunB8.6
Wanrui Li	0665	SatA12.8		0678	SunA12.9
Wansen Shu	0610	SatA7.3		0956	SunA12.12
Wantong Chen	0184	SatA6.4		0854	SunA13.9
	0185	SatA6.5	Wei Luo	0444	SunA4.4
	0889	SatA6.11		0620	SunA4.6
	0186	SatB6.1	Wei Qiao	1325	SunB12.9
	0183	SunB18.3	Wei Qin	1124	SatB15.10
Wanwei Huang	0344	SatB7.1	Wei Teng	0750	SatA14.2
Wanying Xu	0969	SunA18.29	Wei Wang	0435	SatA10.1
Wanyong Yuan	1090	SatA18.34		0589	SatA10.3
Wei Cai	1202	SunA18.40		1003	SatA10.8

	1126	SatA10.10	Weijie Zheng	0547	SatA19.8
	1082	SatB6.7	Weijuan Zheng	0165	SatB2.1
	1071	SatB13.9		0159	SatA2.1
	0752	SunB1.6		0166	SatA2.2
	0692	SunB7.8		0169	SatA2.3
Wei Xu	0686	SunA14.5	Weilin Wang	1167	SatA3.10
	0907	SunA14.7	Weimin Bao	0600	SatB16.3
Wei Xue	0839	SunB7.9		1352	SunA18.45
Wei Yi	0963	SatA18.33		0764	SatA18.26
Wei Zhang	0538	SatB4.4	Weiming Zheng	0694	SunB8.5
	0984	SunA6.11	Weina Guo	0297	SatB1.3
	1206	SunB6.9	Weinan Li	0347	SatB5.5
	0413	SunB11.3	Weining Huang	1080	SatB5.9
	0455	SunB14.5		1086	SatB8.9
	0743	SunB15.8		1268	SatA8.12
	0985	SunB18.33	Weishun Sui	1045	SatA19.13
	0441	SunA15.4		0075	SunA18.1
	0442	SunA15.5	Weiwei Cai	0487	SunB16.2
	0458	SunA15.6		0888	SunA11.7
	0592	SunA15.7	Weiwei Tian	1144	SunA7.10
Wei Zheng	1142	SunA9.10		0839	SunB7.9
Weidong Liang	0876	SatA16.11	Weixuan Liu	0762	SatB4.8
Weidong Zhang	1052	SatB18.33	Weizhi Lv	1203	SunB1.12
Weier Luo	0519	SatA16.10	Weizhi Lyu	0767	SunA2.4
Weiguang Shao	1069	SatB8.8	Wen Ma	0542	SunB16.4
Weiguo Zhang	0076	SatB5.1	Wen Wang	0713	SatB9.8
	0347	SatB5.5		0615	SunB18.23
	0779	SatB5.7	Wenbi Zhao	1105	SatA14.10
	1164	SatB5.11		1140	SatA14.12
	0473	SatA5.6		1092	SunB5.11
	1146	SatA18.7	Wenbin Yu	1244	SatB7.10
Weiguo Zhong	0787	SatB16.6		1253	SatB7.12
Weihai Chen	0485	SunB4.4	Wencai Zhang	0668	SatA6.10
Weihong Song	0746	SunA4.7	Wenchao Xue	0823	SunB15.9
	0465	SunA18.11	Wendi Zhan	0122	SatA9.1
	0743	SunB15.8	Wendong Gai	1125	SatB15.11
Weihua Fang	0367	SunA18.9	Wengao Qian	0571	SunB17.2
Weijia Ren	0244	SatB3.3		1317	SunB17.10
Weijie Cai	0970	SunB6.6	Wenhao Wang	0814	SunA9.4
	0971	SunA18.30	Wenhao Zhu	0560	SunA18.16

Wenhua Wu	1332	SunB8.11	Wenyan Guo	0274	SunA2.2
	1338	SunA15.11	Wenyuan Gu	0519	SatA16.10
Wenhui Bao	0082	SatB10.1	Wenzhao Wang	0385	SunB12.3
Wenhui Han	0536	SunB14.7	Wenzhe Wang	0235	SatB11.4
Wenhui Ma	0960	SunB5.10	Wenzhou Zhou	1083	SatA19.3
Wenjia Zhang	0584	SunB18.22		1234	SatB18.41
Wenjiang Yang	0803	SatB18.24		1141	SunA8.11
Wenjing Zhi	0153	SunB18.2		1227	SatA18.39
	0159	SatA2.1	Wenzhuo Li	0538	SatB4.4
	0169	SatA2.3	Wu Liu	0518	SatB11.6
Wenjuan Lei	0144	SunB18.1		0514	SunA13.4
Wenjun Li	0911	SunA9.5	Wu Zhang	0991	SatB18.29
Wenjun Ni	0624	SunA13.7		X	
Wenjun Yang	0729	SatA15.6	Xi Long	0888	SunA11.7
Wenkai Jiang	0446	SunA7.3		0175	SunB13.2
Wenkai Xiang	1333	SunB14.12	Xi Zhao	0547	SatA19.8
Wenke Ma	1109	SunA2.10	Xian Wang	0299	SatB18.12
Wenliang Dong	0187	SatB3.1	Xianbo Shi	0557	SatB18.19
	0897	SatA3.6	Xiancai Xiang	0998	SunA14.8
Wenlin Wang	0350	SatB14.4	Xianfei Pan	1120	SatB9.11
Wenling Li	1076	SunA18.36		1085	SunB9.8
Wenlong Song	1245	SunA3.11	Xiang Fang	0601	SunB4.5
	1290	SunA3.12	Xiang Li	0777	SunB3.2
Wenlong Yang	1003	SatA10.8		0655	SunB18.25
Wennian Qi	1095	SatB15.9	Xiang Ma	0794	SatB1.8
Wenqi Qiu	1323	SunA18.44		0293	SunB7.2
Wenqi Wu	0535	SatB18.17	Xiang Pan	0654	SunB11.6
	0212	SunA17.2	Xiang Wang	0949	SunA5.6
	1209	SunB2.10	Xiang Yao	0845	SatB6.6
	0850	SunB9.3	Xiang Zhou	0860	SatB11.10
	1085	SunB9.8	Xiangdong Liu	0379	SunB5.4
Wenru Fan	0959	SunB13.9		1272	SunB15.12
Wentong Jia	0954	SatA5.7	Xiangfei Meng	0407	SunB15.5
Wenwei Liang	0979	SunA18.31	Xiangfu Meng	0220	SatB13.4
Wenxin Hao	0695	SatB10.4	Xianghao Hou	1282	SatA12.12
Wenxin Tian	0255	SatB3.4	Xiangkai Ran	0949	SunA5.6
Wenxing Fu	0960	SunB5.10	Xianglun Zhang	0381	SatB15.1
Wenyan Bai	0344	SatB7.1		0503	SatB15.2
	0565	SatB7.6		0552	SatB15.3
	0823	SunB15.9		1124	SatB15.10

	0539	SunB16.3	Xiaoda Li	1257	SunB18.43
Xiangping Zhai	1231	SatB16.10	Xiaodong Han	0648	SunA12.7
	0195	SunA18.5	Xiaodong Hu	0329	SatA12.5
Xiangwan Liu	0787	SatB16.6		0330	SatA12.6
Xiangwei Zhu	0804	SunB12.5	Xiaodong Liu	0271	SunA4.3
Xiangxiang Li	1139	SatB18.36	Xiaodong Shao	0143	SunA10.3
Xiangyang Gao	0182	SatA16.2	Xiaodong Zhang	0742	SatA12.10
Xiangyang Mo	0436	SunB15.6		1305	SunA18.43
Xiangyu Tian	0978	SunB9.5	Xiaofei Ma	1344	SatA4.12
Xiangyu Zhu	0621	SunB7.6		0453	SatB3.7
Xiangyuan Yang	0183	SunB18.3	Xiaofei Yang	0417	SatA1.4
Xiangzhou Wang	0786	SunA17.11	Xiaofeng Gao	1252	SunA7.12
Xianjia Yu	0510	SunA12.4	Xiaofeng He	1083	SatA19.3
Xianjun Shi	0492	SunA12.3		1234	SatB18.41
Xianjun Zhan	0330	SatA12.6		1141	SunA8.11
Xianliang Zhang	0551	SatA3.2		1209	SunB2.10
	0497	SatB3.8		1227	SatA18.39
Xianlin Huang	0319	SatA8.3	Xiaofeng Shi	1179	SatA18.38
Xianpeng Wang	0639	SunB2.3	Xiaofeng Wang	0293	SunB7.2
Xianyong Jing	1346	SunA14.12	Xiaofeng Xia	1154	SunA11.11
Xianzhi Hao	0615	SunB18.23	Xiaogang Yu	1166	SatA3.9
Xiao Chen	1097	SunA18.37	Xiaoguang Hu	0714	SunA18.19
Xiao Han	0695	SatB10.4		0653	SunB2.4
	1292	SunB3.11		0675	SunB2.5
Xiao Lei	0197	SatB18.6		0160	SunB5.2
Xiao Li	0312	SatB9.3		0654	SunB11.6
Xiao Liang	0670	SunB10.7	Xiaoguang Wang	0954	SatA5.7
	0796	SunB10.9	Xiaoguang Zhou	0252	SatA12.2
	0798	SunB10.10		0284	SatA12.4
Xiao Pan	0551	SatA3.2	Xiaohong Yang	0461	SunA13.3
	0497	SatB3.8	Xiaohua He	1074	SunA4.10
Xiaobao Wei	0590	SatB14.6	Xiaohua Song	0278	SatA1.2
Xiaobin Xu	0713	SatB9.8	Xiaohui Chen	1185	SatA9.8
Xiaobo Gao	1287	SunB6.12	Xiaohui Fan	0259	SatB18.10
Xiaobo Li	0407	SunB15.5	Xiaohui Lu	0082	SatB10.1
Xiaobo Qu	0190	SatA5.2	Xiaohui Yan	1228	SatA1.12
Xiaobo Zhang	0915	SatB14.9	Xiaohui Zhou	0396	SatB17.5
Xiaochang Lai	0257	SunB18.9	Xiaoji Niu	0294	SatB12.2
Xiaocheng Wei	1267	SunA9.11		0705	SatB12.7
Xiaochun Tian	1014	SunB2.9	Xiaojin Zhang	0414	SatB4.3

Xiaojing Shen	1284	SunB18.45	Xiaoshan Gao	0400	SunA9.1
Xiaojun Xing	1062	SatA14.8		1320	SunA9.12
	0576	SunB10.5	Xiaoting Liu	0373	SatA2.5
Xiaokang Wang	0435	SatA10.1	Xiaoting Wang	0647	SatA15.4
Xiaokang Yang	0419	SatB12.4		0729	SatA15.6
	0554	SatB12.5		0514	SunA13.4
	0583	SatB12.6	Xiaotong Wang	0117	SatB9.1
Xiaokun Ding	0283	SatA12.3	Xiaowei Fu	0201	SatA16.3
	0329	SatA12.5	Xiaowei Qu	0450	SunA7.4
	0330	SatA12.6	Xiaowei Xu	0700	SunB6.2
	1282	SatA12.12	Xiaowei Yang	0660	SunB11.7
Xiaokun Fan	0980	SunA2.8	Xiaowei Zhang	0277	SunA17.4
Xiaolei Qu	0816	SatA8.4	Xiaowen Shan	1009	SunB18.35
Xiaoli Wang	0642	SatA6.9		1257	SunB18.43
Xiaoliang Wang	0582	SunA3.3	Xiaoxia Han	0272	SatA4.2
	0664	SunA10.8		0470	SatA4.4
Xiaolin Gong	0597	SatA2.6	Xiaoxiang Hu	1106	SatA5.10
Xiaoling Wang	0559	SunA16.6		0929	SatB4.11
Xiaoling Zhu	1325	SunB12.9	Xiaoxiao Lu	0513	SatA18.21
Xiaolong Chen	1308	SatA5.12	Xiaoxiao Yin	0219	SunA18.6
	1173	SatB5.12	Xiaoxiong Liu	0473	SatA5.6
	0247	SatB14.2		1013	SatA5.8
	1342	SunB16.12		0779	SatB5.7
Xiaolong Qian	0117	SatB9.1	Xiaoxu Wang	0374	SunB14.2
Xiaolu Li	0318	SatB9.4	Xiaoxuan Chigan	0739	SatA15.7
Xiaomei Cheng	1134	SatB8.10		0741	SatA15.8
Xiaomin Wang	1168	SatA5.11	Xiaoyan Sheng	1248	SatB2.12
Xiaomin Zhang	1096	SatA14.9	Xiaoyan Yang	0936	SatA3.7
Xiaonan Wang	1335	SatA6.12	Xiaoyang Li	0116	SatA5.1
	1319	SatB6.12	Xiaoye Bi	1111	SunB8.9
Xiaoning Ma	0989	SunB13.11	Xiaoye Wang	1194	SatA8.11
Xiaopeng Gong	0471	SatA18.20	Xiaoying Liang	0318	SatB9.4
Xiaopeng Jia	1203	SunB1.12	Xiaoyu Cheng	0470	SatA4.4
Xiaoping Hu	1234	SatB18.41	Xiaoyu Cui	0295	SatB2.3
	1227	SatA18.39	Xiaoyu Li	1195	SunA6.12
Xiaoping Kong	1153	SatB5.10	Xiaoyu Qu	1088	SatB6.8
Xiaoping Liu	0538	SatB4.4	Xiaoyu Wang	0907	SunA14.7
Xiaoping Ma	0624	SunA13.7	Xiaoyun Guo	1079	SatB16.7
Xiaoqin Jin	0198	SatB18.7	Xiaoyun Shen	0403	SatB18.15
Xiaoru Zhao	1016	SatB8.6	Xiaoyun Sun	0120	SatA19.1

	0118	SunA3.1	Xinglu Li	0373	SatA2.5
	1118	SunA3.7	Xingpeng Zhang	1011	SunA2.9
Xiaozhe Sun	0555	SatB18.18	Xingqi Zhao	1335	SatA6.12
	0662	SunB18.26	Xingshuo Hai	1310	SunB2.12
	1107	SunB18.39	Xingsu Gao	1289	SunA13.12
Xibin Wang	0678	SunA12.9	Xingwei Li	0211	SunA17.1
Xichao Su	0986	SunA13.10	Xingxing Guang	0370	SunB7.3
Xiheng Zang	0126	SatB14.1	Xingxu Yan	1007	SatB12.9
	0247	SatB14.2	Xingyong Li	1037	SunA14.9
	0503	SatB15.2	Xingyu Liu	0753	SunB16.6
	0634	SatB15.4	Xingyu Wang	0116	SatA5.1
	0701	SatB15.5	Xinhong Xie	0767	SunA2.4
	0564	SunA13.5	Xinhua Nie	0343	SunA18.8
Xihua Ma	1317	SunB17.10	Xinhua Wang	0392	SunB18.14
Xijun Zhao	0370	SunB7.3	Xinhua Zhao	0425	SunA1.2
	0391	SatA18.16	Xinlei Sun	1273	SatB18.45
Ximing Chen	0442	SunA15.5	Xinlong Wang	0329	SatA12.5
Xin Bao	0955	SunA1.8		0330	SatA12.6
Xin Cai	1216	SunB11.12	Xinlu Guo	1145	SatA8.8
Xin Cao	1198	SunA3.10	Xinman Wu	0716	SatB4.7
Xin Du	0263	SunA17.3	Xinpeng Di	0618	SatA3.3
Xin Li	0310	SatB18.13	Xinqing Gao	0693	SatA15.5
Xin Luo	1091	SatA11.10		0298	SunA13.1
	0151	SatB13.3	Xinran Zhang	1341	SatA18.8
Xin Ma	0584	SunB18.22	Xinru Liu	1179	SatA18.38
Xin Tian	0668	SatA6.10	Xinrui Ren	1215	SatA16.12
	1219	SatB6.9	Xinsai Lv	0432	SatA1.5
Xin Yi	1197	SatB16.9	Xinting He	0353	SunB18.12
Xin Yu	0989	SunB13.11	Xinxin Tao	1295	SunA18.42
	1102	SunB13.12	Xinxin Wang	0319	SatA8.3
Xin Zhou	0348	SunB14.1	Xinyi Zhao	1127	SatA18.37
Xinda Shi	0374	SunB14.2	Xinyu Feng	0426	SatA5.5
Xindi Tong	0700	SunB6.2	Xinyu Hou	0453	SatB3.7
Xing Gao	1258	SatA3.11	Xinyu Liu	0918	SunA18.27
Xing Wang	0081	SunA18.2	Xinyu Sun	0475	SunB14.6
Xing Zhou	1026	SunB18.37	Xinyu Zhang	1259	SatA9.10
Xingang Liang	0288	SatB18.11		0837	SunA1.7
Xingchang Jin	1195	SunA6.12	Xiong Deng	1304	SatA18.43
Xinghang Luo	1014	SunB2.9	Xiongkui He	1130	SunA5.8
Xingjian Wang	0495	SatB2.4		0355	SunA5.2

	1131	SunA5.9		1136	SunB14.10
	1291	SunA5.10	Xu Yang	1176	SunA2.11
Xiujun Du	0153	SunB18.2	Xuan Huang	1056	SunA3.6
Xiulin Zhang	0426	SatA5.5		1054	SunA10.9
	0816	SatA8.4	Xuan Liu	0582	SunA3.3
	0501	SatA13.7	Xuan Xiao	0849	SatB9.9
Xiuzhi Zhao	0570	SunA1.3	Xuan Zhang	0437	SatA18.46
	0561	SunB11.5		1029	SatB10.11
Xiueqiang Jiang	0524	SatB7.4	Xuanang Li	0431	SatA9.2
Xiuxia Yang	0948	SunB16.10	Xuanyu Yao	0803	SatB18.24
Xiuxin Wang	0934	SatB18.28	Xuanyuan Su	0579	SatB4.5
Xiuyun Meng	0795	SatA15.9	Xuanze Zhao	0396	SatB17.5
Xiuzhen Wu	0956	SunA12.12	Xuchen Wang	0660	SunB11.7
	0948	SunB16.10	Xudong Huang	0854	SunA13.9
	0481	SunA12.2	Xudong Li	0905	SunB2.8
Xiawang Dong	0101	SatA7.1	Xudong Zhang	1100	SunA1.10
	0938	SatA7.6		1101	SunA1.11
	0947	SatA7.7	Xudong Zhen	0106	SatA13.1
	0958	SatA7.8	Xue Du	0874	SunA15.8
	1067	SatA7.9	Xue Liu	0631	SatB4.6
	1200	SatA7.11		0716	SatB4.7
	1205	SatA7.12	Xue Shang	0287	SatA19.5
	0462	SatB7.3	Xue Wang	0425	SunA1.2
	0689	SatB7.8	Xuean Sun	0593	SatB5.6
	0943	SatB7.9		1153	SatB5.10
	0704	SunA11.5		0607	SatB18.20
Xiwei Peng	0371	SunA17.6	Xuebing Li	0566	SatA14.1
	0786	SunA17.11	Xuedong Zhao	0195	SunA18.5
Xiwei Wu	0576	SunB10.5	Xuehu Ma	0820	SatB10.7
	0627	SatA18.23	Xueming Luo	1315	SunA16.10
Xixuan Chen	1292	SunB3.11	Xueping Wang	0966	SatA14.3
Xiyu Fu	0333	SatA18.15	Xueru Ge	0722	SunB14.9
Xiyuan Chen	0950	SunB9.4	Xuesheng Qin	0847	SatB10.8
Xizi Tao	1313	SatB16.11		0937	SunA18.28
Xu Chen	0805	SunA1.6	Xuesong Hu	1103	SunA4.11
	0806	SunA2.6	Xuesong Wu	1234	SatB18.41
Xu Huang	0344	SatB7.1		1209	SunB2.10
Xu Wang	1302	SunB4.12		1227	SatA18.39
Xu Wu	0828	SunA18.22	Xueyao Zhu	0410	SatA18.2
	0826	SunB11.9	Xueye Chen	1089	SatA11.9

Xueying Wang	0535	SatB18.17	Yan Ma	1119	SunA4.12
Xufei Peng	0124	SatA12.1	Yan Yang	1065	SunA5.7
Xuguo Qin	1201	SatA11.11	Yan Zhang	0392	SunB18.14
	1183	SunB4.11		0631	SatB4.6
				0716	SatB4.7
Xuheng Li	0947	SatA7.7			
Xun Gu	0158	SunB1.1	Yan Zhou	0508	SatA18.3
Xunhong Lv	0762	SatB4.8		0881	SunB18.30
Xuqiao Wang	0629	SatB6.4	Yanan Fang	1024	SunA3.5
				1038	SunB3.10
Xuxin Zhu	1306	SunA11.12		1340	SatA18.44
Xuzan Liu	0776	SunA5.4	Yanan Yu	1077	SatA10.9
	0789	SunA5.5	Yanbin Liu	0581	SatB11.7
Y				0792	SatB11.9
Ya Zhang	0766	SunB5.8		1040	SatA5.9
	1193	SunB9.9		1351	SunB8.12
	1260	SatB9.12	Yanbin Teng	0268	SunA15.2
	1286	SatA18.42		0269	SunA15.3
Yadong Chen	0588	SatB7.7	Yanbin Zhao	0457	SunA3.2
	1208	SunB6.10	Yanbo Feng	0080	SatB18.2
Yahui Gao	0402	SunB11.2	Yanchao Shao	0980	SunA2.8
Yahui Liu	1055	SunB1.10	Yandong Zhao	1276	SunA14.11
Yahui Qi	0481	SunA12.2	Yanfang Liu	1093	SatB13.10
	0956	SunA12.12	Yanfeng Wu	0105	SunB5.1
Yajia Liu	0355	SunA5.2	Yang Cao	1299	SatA19.10
	1130	SunA5.8	Yang Li	0194	SunB18.4
	1291	SunA5.10		0237	SunB18.7
Yajie Ma	0546	SatA19.2		0242	SatB1.2
Yajun Li	0222	SunA5.1		0373	SatA2.5
	0499	SatA10.2		0453	SatB3.7
Yajun Yu	1275	SatA2.12		0899	SunA8.7
Yakai Wang	0747	SunA7.8		0900	SunA8.8
Yalei Li	0538	SatB4.4		1266	SunB14.11
Yali Liu	0235	SatB11.4	Yang Shang	0283	SatA12.3
Yalun Zhang	0764	SatA18.26	Yang Xiang	0222	SunA5.1
Yan Fang	0300	SatA18.14	Yang Xu	0182	SatA16.2
Yan Guo	0630	SatA18.24		0537	SunB8.2
	0908	SunB4.6		0694	SunB8.5
	1333	SunB14.12	Yang Yang	0087	SunA10.2
Yan Jiang	0819	SatB18.25		1080	SatB5.9
Yan Li	0945	SatB8.5		1244	SatB7.10
	1018	SatA13.11		1268	SatA8.12
	1062	SatA14.8	Yang Ye	1246	SatB13.12
	1133	SatA8.6	Yang Yuan	0858	SatA13.10
	1152	SatA8.9	Yang Zhang	0197	SatB18.6
				0288	SatB18.11

	1200	SatA7.11		1275	SatA2.12
Yang Zhao	0861	SunB16.8	Yanzheng Zhao	1202	SunA18.40
Yang Zhou	0708	SatB10.6	Yao Chen	0720	SatA2.7
	0769	SatB4.9	Yao Xiao	0805	SunA1.6
Yang Zhu	0837	SunA1.7		0806	SunA2.6
	1259	SatA9.10	Yao Zhang	1287	SunB6.12
Yangang Liang	0334	SatB10.3	Yao Zou	0266	SatA19.12
	0847	SatB10.8	Yaohong Qu	1092	SunB5.11
	0885	SatB10.9		1105	SatA14.10
	0937	SunA18.28	Yaozu Ding	1210	SunA18.41
Yangguang Xie	0568	SunB7.5	Yapeng Li	0272	SatA4.2
Yangjie Wang	0696	SatB10.5	Yaqin Sun	1193	SunB9.9
	0977	SatB10.10		1286	SatA18.42
	1029	SatB10.11	Yaruixi Gao	0846	SatB18.26
Yangkang Zhang	0064	SunA14.1	Yazhong Luo	1239	SatB18.42
Yangping Deng	0121	SunA2.1	Yazhou Yue	0381	SatB15.1
Yangrui Kang	0943	SatB7.9		0539	SunB16.3
Yanguo Hu	0218	SatA4.1		1124	SatB15.10
Yangwang Fang	0921	SatB15.8	Ye Lin	0140	SunA15.1
	0960	SunB5.10	Ye Sun	0481	SunA12.2
Yanhong Lu	0632	SatA13.8	Yebin Ni	0296	SatA5.4
Yanhong Luo	0893	SunB1.7	Yeguang Wang	0230	SatA19.11
Yanhua Han	0181	SunA4.2		0392	SunB18.14
Yanhua Zhang	0690	SunA6.8	Yeijing Tang	0458	SunA15.6
Yanjie Min	1180	SunA16.9	Yi Huang	1354	SatB16.12
Yanjie Zhao	0075	SunA18.1	Yi Chen	1049	SunB9.7
Yankai Li	0463	SatA1.6	Yi Fang	1169	SatA8.10
Yanli Du	0792	SatB11.9	Yi Gu	0282	SunB10.3
	1351	SunB8.12	Yi Ji	1126	SatA10.10
Yanli Zhao	0861	SunB16.8	Yi Ren	0834	SatA4.8
Yanming Fan	0218	SatA4.1		1310	SunB2.12
Yanping Sheng	0339	SatB3.5	Yi Shen	0517	SunB1.3
	0384	SatB3.6	Yi Wang	0417	SatA1.4
Yanqing Cheng	1186	SatB18.38	Yi Xu	0457	SunA3.2
Yanqing Cui	0509	SunB18.18	Yi Yang	0075	SunA18.1
Yanran Cao	0997	SatB18.31		1045	SatA19.13
Yanrong Wang	0070	SunA10.1	Yi Yuan	1321	SunA16.11
Yanshun Zhang	0643	SunB17.4	Yi Zhang	0664	SunA10.8
Yanwei Wang	0111	SunB13.1	Yi Zhao	1008	SatB18.32
Yanwei Zhu	0175	SunB13.2		1063	SatB12.10
	0366	SunB13.5	Yibo Fan	0332	SunA8.3
Yanxiang Wang	1020	SatA14.5	Yibo Li	1086	SatB8.9
	1025	SatA14.6	Yibo Tian	1307	SatB6.10
Yanxue Zhang	0700	SunB6.2		1311	SatB6.11
Yanyan Luo	1248	SatB2.12	Yichen Cheng	0589	SatA10.3

Yichen Li	1244	SatB7.10	Yineng Li	1326	SunB12.10
	1253	SatB7.12		1329	SunB12.11
Yicheng Gao	0416	SatA18.17	Ying Luo	0394	SatB9.5
	1128	SatB18.35		0344	SatB7.1
Yicheng Shou	1272	SunB15.12		0565	SatB7.6
Yidi Wang	1142	SunA9.10	Ying Tang	0286	SatA18.12
Yidong Chen	1185	SatA9.8	Ying Wang	1156	SatB15.12
Yidong Li	0595	SatB14.7	Ying Zhang	1016	SatB8.6
Yifan Qi	0218	SatA4.1		1170	SunB18.41
Yifan Wu	0814	SunA9.4		1172	SunA18.39
Yifan Yu	0105	SunB5.1	Ying Zhu	1060	SatA14.7
Yifeng Niu	0905	SunB2.8	Yinghua Han	0321	SatB5.4
Yifeng Wang	0816	SatA8.4	Yingjing Qian	0310	SatB18.13
Yifu Jiang	0161	SatB12.1	Yingmei Li	0470	SatA4.4
Yihan Zhao	1339	SatB14.12	Yingnan Ma	1113	SunB18.40
Yihang Luo	0308	SunB2.1	Yingqing Guo	0895	SunA2.7
Yiheng Liu	1020	SatA14.5		1295	SunA18.42
	1025	SatA14.6	Yingshan Huang	0993	SunB4.8
Yihong Sun	0597	SatA2.6	Yingtao Zhou	0512	SunB11.4
Yihua Zhao	1125	SatB15.11	Yingxue Mei	0533	SatB13.7
Yijie He	0623	SunA3.4	Yingxun Wang	0100	SatA8.1
Yike Song	0111	SunB13.1		0154	SatB8.1
Yilin Han	0447	SatA15.2		0258	SatA8.2
Yilin Liu	0630	SatA18.24		0437	SatA19.3
Yilin Zhao	0317	SunB12.2		0438	SatB8.2
Yilong Chen	0647	SatA15.4		0459	SatB8.3
	0693	SatA15.5		1021	SatB8.7
Yimeng Gao	0406	SunA11.2		1047	SunA11.9
Yimin Deng	0844	SatA18.29		1048	SunA11.10
	0858	SatA13.10		1119	SunA4.12
	0870	SunB18.29		1134	SatB8.10
Yimin Kou	0244	SatB3.3		1138	SatB8.11
Yiming Cao	1070	SatB2.10		1143	SatA8.7
Yiming Deng	0252	SatA12.2	Yingying Jiang	0254	SatA7.2
Yiming Guo	0576	SunB10.5		0384	SatB3.6
	1062	SatA14.8	Yingying Qi	0936	SatA3.7
Yiming Huang	1087	SatB18.34	Yingying Ran	0713	SatB9.8
Yiming Yang	0442	SunA15.5	Yingying Wang	1122	SatB1.11
Yin Cao	0690	SunA6.8	Yingyuan Teng	0655	SunB18.25
Yin Li	0125	SatA6.3	Yinlei Bian	0924	SatB4.10
Yin Lu	0198	SatB18.7	Yinong Zhang	0691	SunA6.9
Yin Wang	0593	SatB5.6	Yinzhang Tong	0449	SunA18.10
	0607	SatB18.20	Yipeng Liu	1183	SunB4.11
	1006	SatA15.11	Yipeng Zhou	0262	SunA14.3
	1153	SatB5.10	Yiqun Dong	0636	SunB8.3

	0721	SatA13.9	Yonghong Chen	0501	SatA13.7
	1043	SunB1.9	Yonghui Chen	0698	SatA18.25
Yiran Li	0335	SunA17.5		0719	SunB17.7
Yishi Liu	0128	SatB1.1	Yongjie Mao	0359	SatA4.3
Yisi Liu	1035	SatA3.8	Yongjie Wang	0510	SunA12.4
Yisu Yan	0259	SatB18.10	Yongliang Chen	0106	SatA13.1
Yiting Chen	1333	SunB14.12		0107	SatA13.2
Yiwei Xu	0563	SunA6.4	Yongliang Wu	1009	SunB18.35
Yiwen Hu	0508	SatA18.3		1257	SunB18.43
Yixiao Zhu	0963	SatA18.33	Yongmei Cheng	1305	SunA18.43
Yixin Hua	1123	SatA14.11	Yongqi Weng	1266	SunB14.11
	1140	SatA14.12	Yongqing Sun	0879	SatA3.5
Yixin Huang	0664	SunA10.8	Yongquan Sun	1066	SatA4.10
Yixuan Xue	0861	SunB16.8	Yongrong Sun	0333	SatA18.15
Yixue Luo	1329	SunB12.11	Yongshan Liu	1017	SunB18.36
Yize Guo	0432	SatA1.5	Yongsheng Wu	1289	SunA13.12
Yizheng Li	1208	SunB6.10	Yongshuai Wang	0822	SunA13.8
Yong Guo	0436	SunB15.6	Yongshuang Qi	1000	SunB6.8
	1162	SatB16.8	Yongtao Luo	0865	SatA2.8
Yong Huang	0061	SatB18.1	Yongwen Yang	1080	SatB5.9
Yong Liu	1033	SunB18.38		1086	SatB8.9
Yong Lu	1288	SunA15.10		1268	SatA8.12
Yong Luo	1012	SunB9.6	Yongxi Lyu	0190	SatA5.2
Yong Tang	0657	SunB8.4		0216	SatA5.3
Yong Wang	0122	SatA9.1		0314	SatB5.3
	0621	SunB7.6		0954	SatA5.7
	0736	SatB3.10	Yongxin Shi	0444	SunA4.4
	0737	SatB3.11		0620	SunA4.6
	0998	SunA14.8		1015	SunA4.9
Yong Xiao	0665	SatA12.8	Yongyan Liu	0570	SunA1.3
Yong Zheng	1097	SunA18.37	Yongyi Liu	0382	SatA13.5
Yongbin Sun	1154	SunA11.11		1150	SatB8.12
Yongbin Zheng	0969	SunA18.29	Yongzhao Hua	0101	SatA7.1
Yongbo He	0959	SunB13.9		0689	SatB7.8
Yongbo Si	0348	SunB14.1		0938	SatA7.6
Yongchao Liu	0761	SunA1.5		0947	SatA7.7
Yongchun Fang	0670	SunB10.7		1067	SatA7.9
	0796	SunB10.9	Yongzhen Liu	1041	SatA8.5
	0798	SunB10.10	Yongzhi Sheng	1032	SunB3.8
Yongfeng Zhi	0223	SatB18.8		1034	SunB3.9
	0274	SunA2.2	You Cao	0470	SatA4.4
	1033	SunB18.38	You Duan	1092	SunB5.11
Yonghao Xie	1245	SunA3.11	Youdao Ma	0517	SunB1.3
	1290	SunA3.12	Youlong Wu	0808	SatA18.27
Yonghe Xie	0389	SunB15.4	Youmin Shi	0322	SatB18.14

	1217	SatA2.10	Yuanfang Qu	0537	SunB8.2
Youmin Zhang	0121	SunA2.1	Yuangan Li	0815	SatB8.4
	0562	SunA6.3		0816	SatA8.4
	0563	SunA6.4	Yuanhe Liu	0334	SatB10.3
	0635	SunA6.5		0847	SatB10.8
	0650	SunA6.6		0937	SunA18.28
	0652	SunA6.7		1056	SunA3.6
Youyu Xu	1001	SatB14.10	Yuanjie Meng	0876	SatA16.11
Yu Cao	0674	SatB9.7	Yuanlin Yan	0866	SatB1.9
Yu Chen	0811	SatA4.7	Yuanqing Xia	0327	SunA8.2
Yu Ding	0482	SunB6.1	Yuansong Jiang	0642	SatA6.9
	0799	SatB17.7	Yuanwen Wang	0526	SatB1.6
Yu Fu	1327	SunB16.11	Yuanwen Zhang	0487	SunB16.2
Yu Han	1336	SunA8.12	Yuanxin Pei	0867	SunB6.5
Yu Hu	0977	SatB10.10	Yuanyang Cao	0774	SunA5.3
Yu Kang	1256	SunA14.10		0776	SunA5.4
	1299	SatA19.10		0789	SunA5.5
Yu Li	0441	SunA15.4	Yuanye Zhang	0480	SunB18.17
	0473	SatA5.6	Yubo Yang	1044	SunA18.35
	0779	SatB5.7	Yuchen Wang	0435	SatA10.1
	1013	SatA5.8	Yuchen Zhang	0894	SunA18.25
	1106	SatA5.10		1218	SatB18.40
	1146	SatA18.7	Yuchen Zhou	1098	SunA9.9
	1351	SunB8.12	Yucheng Cui	1011	SunA2.9
Yu Niu	1048	SunA11.10	Yudong Wang	1204	SatA11.12
Yu Sun	0101	SatA7.1	Yue Li	0787	SatB16.6
Yu Tian	0553	SunB10.4		0811	SatA4.7
	0556	SunB3.1	Yue Liu	0310	SatB18.13
Yu Wang	0215	SunB15.1	Yue Wang	0299	SatB18.12
Yu Wu	0331	SunB16.1	Yue Yu	1322	SatA17.12
Yu Xiong	1307	SatB6.10	Yue Zhao	0528	SatB16.2
	1311	SatB6.11		1102	SunB13.12
Yu Yang	0341	SatA16.5	Yuecheng Liu	0323	SunB2.2
Yuan Cao	0373	SatA2.5		0927	SatB18.27
Yuan Gao	0361	SatB14.5	Yuehua Cheng	0650	SunA6.6
Yuan Li	1316	SatA3.12		0690	SunA6.8
Yuan Ni	0135	SunA6.1		0884	SunA6.10
Yuan Tian	0143	SunA10.3		1094	SatB1.10
Yuan Zhang	0344	SatB7.1	Yuehui Xie	0291	SatB9.2
	0565	SatB7.6	Yuelong Luo	0524	SatB7.4
	0635	SunA6.5	Yuelong Ma	1173	SatB5.12
	0675	SunB2.5		1308	SatA5.12
Yuan Zhong	0949	SunA5.6	Yueping Wang	0514	SunA13.4
Yuanbo Hao	1209	SunB2.10		0749	SunB8.6
Yuan Chun Li	1334	SunB7.12	Yueqian Liang	0075	SunA18.1

	1045	SatA19.13	Yule Gui	0104	SunA7.1
Yuetao Ren	0223	SatB18.8		0920	SunB7.10
Yueyang Ben	0875	SatA18.30	Yulei Tian	0897	SatA3.6
	1046	SunA9.8	Yulong Pan	0235	SatB11.4
	1137	SatB12.11	Yulong Shi	0877	SunA18.23
Yueyang Hua	1249	SatA9.9	Yulong Zhang	1202	SunA18.40
Yufang Zhang	0269	SunA15.3	Yumeng Xue	0930	SatA18.32
Yufei Xu	0457	SunA3.2	Yumin Liu	0154	SatB8.1
Yufeng Liang	1178	SatB11.11	Yun Zhang	1251	SatA18.40
Yufeng Mi	0501	SatA13.7	Yunbo Zhao	1256	SunA14.10
Yufeng Qin	0492	SunA12.3		1276	SunA14.11
Yufeng Qu	0512	SunB11.4		1299	SatA19.10
Yufeng Xiao	0291	SatB9.2	Yunchong Zhu	0334	SatB10.3
	0394	SatB9.5	Yuncong Wei	1351	SunB8.12
Yuguang Song	0869	SunB2.7	Yunfei Liu	0201	SatA16.3
Yuguang Zou	0456	SunB18.15	Yunfei Ma	1017	SunB18.36
Yuhan Cao	0080	SatB18.2	Yunfei Wang	0117	SatB9.1
Yuhan Chen	0282	SunB10.3	Yunhao Fu	0190	SatA5.2
Yuhang Bi	0962	SunA1.9	Yunhao Liu	0870	SunB18.29
Yuhang Gao	1280	SunB9.10	Yunhong Lu	0617	SunA12.5
Yuhang He	0945	SatB8.5	Yunhua Li	1176	SunA2.11
	1133	SatA8.6	Yunhua Wu	1004	SunB7.11
Yuhang Kang	0182	SatA16.2		1144	SunA7.10
Yuhang Zhong	0798	SunB10.10		1252	SunA7.12
Yuhao Wang	0087	SunA10.2	Yunhui Dong	0895	SunA2.7
Yuhua Ding	0604	SatA18.5	Yunhui Wang	0321	SatB5.4
	0609	SunA4.5	Yunjie Wu	0188	SunA18.3
Yuhua Qi	1185	SatA9.8		0261	SatB14.3
Yuhua Wu	1228	SatA1.12		0365	SatB13.5
Yuhuan Ran	0532	SatB7.5		0523	SunB7.4
Yuhui Hu	0243	SatA19.4	Yunjun Chen	0224	SatA1.1
Yuhui Wang	1256	SunA14.10		1210	SunA18.41
Yujie Cheng	0745	SatA4.5	Yunpeng Cai	0321	SatB5.4
	0799	SatB17.7	Yunpeng Cheng	1181	SatB18.37
	1192	SatA4.11	Yunpeng Chen	1261	SunA2.12
Yujie Guo	0786	SunA17.11	Yunping Liu	0367	SunA18.9
Yujie Liu	0787	SatB16.6	Yunsheng Fang	1336	SunA8.12
Yujie Wang	0089	SatA11.1	Yunxiang Zhang	1186	SatB18.38
	0114	SatA11.2	Yunxiao Qian	0093	SatA16.1
	0232	SatB11.3		0162	SatB11.1
Yujie Zhang	0689	SatB7.8	Yunyan Wu	0347	SatB5.5
Yukun Yang	0503	SatB15.2		0514	SunA13.4
	0634	SatB15.4		0518	SatB11.6
	0701	SatB15.5		0749	SunB8.6
Yukun Zhou	0294	SatB12.2	Yunyu Bai	0972	SunB3.6

Yupeng Li	0640	SunB18.24	Zehui Mao	0762	SatB4.8
Yuping Lu	0851	SunB8.7	Zehui Wang	1102	SunB13.12
Yuqi Han	1236	SatA19.14	Zejun Zhu	1126	SatA10.10
	1263	SunB2.11	Zenan Qin	0972	SunB3.6
Yuqiang Jin	0328	SatA16.4	Zenghui Wang	0570	SunA1.3
	0360	SunA12.1		0866	SatB1.9
Yuqing Gong	0615	SunB18.23	Zengliang Han	0935	SatA1.9
Yuqing Zhang	0958	SatA7.8	Zepeng Lu	0402	SunB11.2
Yuran Li	1253	SatB7.12	Zeqian Xu	1007	SatB12.9
Yuru Bin	1132	SunA8.10		1207	SatB12.12
Yuru Feng	0949	SunA5.6	Zequn Liu	0130	SatA11.3
Yuru Tian	0345	SunB15.3	Zesheng Jin	0874	SunA15.8
	0386	SunB18.13	Zeshun Li	1066	SatA4.10
Yusen Lin	0886	SunB12.8	Zeyan Wu	0378	SunB5.3
Yushuang Wang	1285	SunA10.12		0682	SunB5.7
Yusong Wang	1142	SunA9.10	Zeyu Hao	1143	SatA8.7
Yuteng Cao	0565	SatB7.6	Zeyu Jin	1194	SatA8.11
	0823	SunB15.9	Zeyu Kang	0409	SunA10.5
Yutian Zhou	0884	SunA6.10		0664	SunA10.8
Yuting Dai	0450	SunA7.4	Zeyu Wang	0578	SatA9.3
Yuting Liu	0707	SatB15.6		1226	SatA17.10
Yuting Wang	0296	SatA5.4	Zeyue Li	1037	SunA14.9
Yuwei Cui	0126	SatB14.1	Zhan Li	0608	SatA9.4
Yuwei Zhang	0495	SatB2.4	Zhan Zhang	1106	SatA5.10
Yuwu Yao	1228	SatA1.12		1152	SatA8.9
Yuxiang Ma	1176	SunA2.11	Zhang Ren	0101	SatA7.1
Yuxiang Zhang	0501	SatA13.7		0128	SatB1.1
Yuxiang Zhou	0257	SunB18.9		0462	SatB7.3
Yuxiao Wang	0994	SatB18.30		0689	SatB7.8
Yuxin Gao	1064	SatB10.12		0704	SunA11.5
Yuxin Wang	0983	SunB13.10		0938	SatA7.6
Yuxin Ye	0997	SatB18.31		0958	SatA7.8
Yuxin Zhao	0287	SatA19.5		0943	SatB7.9
	1046	SunA9.8		0947	SatA7.7
	1304	SatA18.43		1067	SatA7.9
Yuxing Liu	0214	SunB18.5		1200	SatA7.11
Yuxue Cao	1109	SunA2.10		1205	SatA7.12
Yuyin Tian	0183	SunB18.3	Zhanggang Lyu	0485	SunB4.4
	0185	SatA6.5	Zhanglei Chen	1097	SunA18.37
Yuyu Zhao	0994	SatB18.30	Zhangyin Tong	0443	SatA18.19
Yuzhe Li	1233	SatB2.11	Zhanshan Zhao	0224	SatA1.1
Yuzhen Meng	0800	SatA9.7	Zhanzhan Li	0893	SunB1.7
	Z		Zhao Deng	0189	SunA18.4
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	1348	SunA5.12		0707	SatB15.6
Zhao Yang	0739	SatA15.7	Zhenduo Xu	0661	SunA2.3
	0741	SatA15.8	Zheng Gong	0106	SatA13.1
Zhaobin Ye	1269	SatA9.11		0107	SatA13.2
Zhaobo Li	1330	SunB18.46		1302	SunB4.12
Zhaocai Wu	1087	SatB18.34	Zheng Hou	1169	SatA8.10
Zhaochen Lin	1341	SatA18.8	Zheng Shao	0426	SatA5.5
Zhaodian Chu	0592	SunA15.7	Zheng Zhang	0101	SatA7.1
Zhaodong Sun	0874	SunA15.8		0689	SatB7.8
Zhaofa Zhou	1007	SatB12.9		0704	SunA11.5
	1207	SatB12.12		1205	SatA7.12
Zhaoguang Qin	0891	SunB18.32	Zhengduo Zhao	0579	SatB4.5
Zhaohong Peng	1128	SatB18.35		0811	SatA4.7
Zhaohui Qi	0471	SatA18.20	Zhengen Zhao	0085	SatA6.1
Zhaoke Ning	0587	SatA18.4		0213	SatA18.10
	0588	SatB7.7	Zhengfeng Liu	0268	SunA15.2
Zhaolei Wang	0820	SatB10.7		1212	SunA15.9
Zhaoliang Zhang	0150	SatB13.2	Zhenghong Gao	0691	SunA6.9
Zhaolin Fan	1338	SunA15.11	Zhenghong Han	1071	SatB13.9
Zhaoshun Wang	0313	SunA16.4	Zhenghua Liu	0531	SunB12.4
	0747	SunA7.8		0738	SunB16.5
Zhaoting Li	0860	SatB11.10	Zhenguo Zhang	1334	SunB7.12
Zhaotong Chen	0682	SunB5.7	Zhengxing Wu	0490	SatA19.7
Zhaowei Ma	0905	SunB2.8	Zhengyou Wen	0205	SunB7.1
Zhaowei Sun	1010	SunB8.8	Zhengyu Song	0857	SunB6.4
Zhaoxiang Xiong	1294	SatA9.12		0890	SunB3.5
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Zhaoyi Zhang	0791	SunB6.3	Zhenhua Wang	0517	SunB1.3
Zhaozi Zu	0246	SatA18.11	Zhenjie Ma	0767	SunA2.4
Zhe Zhen	0094	SatA6.2		1203	SunB1.12
Zhekun Cheng	0651	SatA10.4	Zhenkun Li	0207	SatB2.2
Zheming Tu	1120	SatB9.11	Zhenlin Xing	0500	SatA13.6
Zhen Li	1272	SunB15.12		0721	SatA13.9
Zhen Niu	1027	SatB13.8		1039	SatA13.12
Zhen Wang	0848	SunB2.6	Zhennan Li	0424	SunB14.3
	0893	SunB1.7	Zhenpeng Wang	0484	SunB9.2
	0898	SunA18.26	Zhenpo Tian	0927	SatB18.27
Zhen Yang	0116	SatA5.1	Zhenqiang Qi	0900	SunA8.8
	0146	SatB17.3	Zhenshu Yang	1195	SunA6.12
Zhen Zhou	1066	SatA4.10	Zhentaο Xue	0774	SunA5.3

	0776	SunA5.4		1047	SunA11.9
	0789	SunA5.5		1048	SunA11.10
Zhenwei Li	0742	SatA12.10		1119	SunA4.12
Zhenwei Ma	0249	SunB8.1		1134	SatB8.10
	0666	SunA1.4		1138	SatB8.11
	0733	SunB18.27		1143	SatA8.7
	0734	SunB11.8	Zhiheng Liu	1084	SatB14.11
	0646	SatA1.7	Zhihong Deng	0849	SatB9.9
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	0449	SunA18.10	Zhihua Li	1243	SatB18.43
	0561	SunB11.5	Zhihua Tang	1233	SatB2.11
	0570	SunA1.3	Zhihui Bai	0885	SatB10.9
Zhezong Wang	0519	SatA16.10	Zhihui Li	1285	SunA10.12
Zhi Cao	0246	SatA18.11	Zhijie Zhou	0272	SatA4.2
Zhi Li	1337	SatA15.12	Zhikai Hou	1078	SatA11.8
Zhi Wang	0610	SatA7.3	Zhikai Wang	0960	SunB5.10
Zhi Xiong	0155	SatB18.5	Zhikun Tan	1212	SunA15.9
	0196	SunB9.1	Zhili Zhang	1207	SatB12.12
	1326	SunB12.10	Zhilin Fan	0447	SatA15.2
	1329	SunB12.11	Zhilin Liu	0146	SatB17.3
Zhi Zhang	0866	SatB1.9	Zhimin Li	0450	SunA7.4
Zhiang Xu	1067	SatA7.9	Zhiming Chen	0446	SunA7.3
Zhibao Su	0391	SatA18.16		0568	SunB7.5
Zhibin Zhang	1038	SunB3.10		0839	SunB7.9
	1340	SatA18.44	Zhiming Guo	0189	SunA18.4
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Zhicai Xiao	0328	SatA16.4	Zhinan Liu	0983	SunB13.10
	0360	SunA12.1	Zhiqi Niu	0961	SatA10.6
Zhicheng Han	0963	SatA18.33		0966	SatA14.3
Zhidong Lu	0988	SunB4.7	Zhiqian Zhao	1007	SatB12.9
Zhidong Meng	0849	SatB9.9		1207	SatB12.12
Zhifang Fan	0310	SatB18.13	Zhiqiang Cao	0263	SunA17.3
Zhifu Wang	0614	SatA6.7	Zhiqiang Guo	1065	SunA5.7
Zhigang Chen	0180	SatA3.1	Zhiqiang Zhao	0413	SunB11.3
Zhigang Gao	0644	SunB17.5	Zhiqiang Zhou	0886	SunB12.8
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Zhigang Qi	0598	SunB17.3	Zhishi Chen	0925	SatA11.5
Zhiguang Feng	0425	SunA1.2	Zhishu Xu	0409	SunA10.5
	0962	SunA1.9	Zhishuai Tang	0149	SatB13.1
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	1221	SatA2.11		0107	SatA13.2
Zhiyong Miao	1049	SunB9.7	Ziao Tang	0600	SatB16.3
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	0414	SatB4.3	Zichao Zhang	0774	SunA5.3
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	1011	SunA2.9		0789	SunA5.5
Zhizheng Xu	0550	SunB18.21	Zicong Wang	0862	SatB9.10
	0703	SatB18.22	Zidong Liu	0660	SunB11.7
Zhizhong Liao	0142	SatB10.2	Zihan Li	0220	SatB13.4
Zhong Yang	0808	SatA18.27	Zihao Lu	0801	SunA18.21
Zhong Zheng	0920	SunB7.10	Zihao Zhang	0600	SatB16.3
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Zhonghua Wu	0506	SunA6.2	Ziheng Zhang	0626	SunA12.6
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Zhongjing Ma	0644	SunB17.5	Zihui Tang	1191	SunB1.11
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	0232	SatB11.3	Zilong Chen	1113	SunB18.40
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Zhongyu Yang	0650	SunA6.6	Ziquan Yu	0562	SunA6.3
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	1140	SatA14.12	Zixi Guo	0509	SunB18.18
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Zongwei Huang	0817	SatA7.4
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Zongyang Chen	1120	SatB9.11
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	0461	SunA13.3
Zongzhun Zheng	0089	SatA11.1
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Zundeng Feng	0286	SatA18.12
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Zuocheng Wu	1012	SunB9.6
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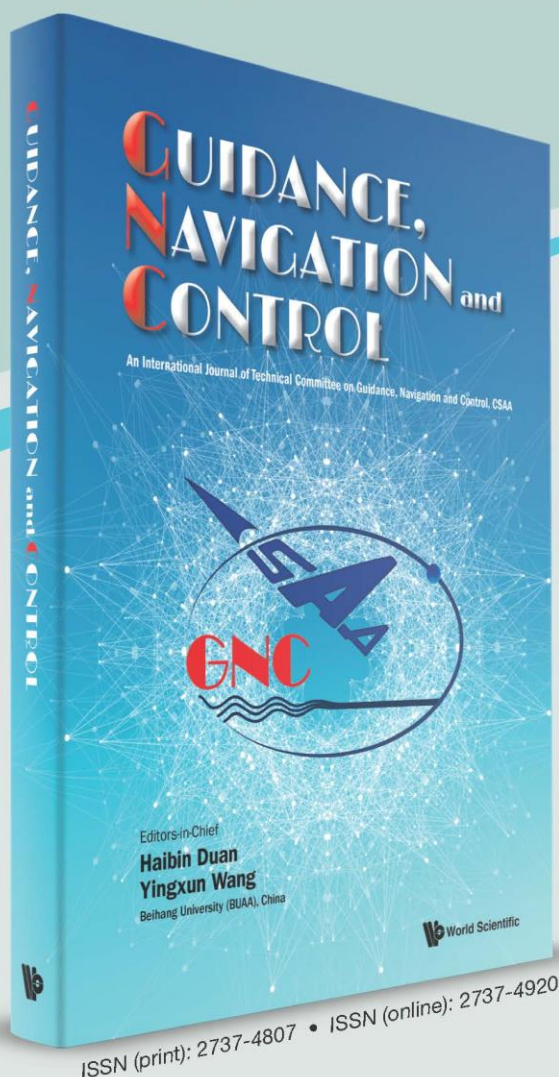
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