

## The 37th Chinese Control Conference (CCC2018)

The 37th Chinese Control Conference (CCC2018) was held on July 25–27, 2018 at the Wuhan East Lake International Convention and Exhibition Center, Wuhan, Hubei Province, China. Wuhan is known as a famous historical city in China. The city, with its rich historical heritage and natural pride, is renowned for the Wuhan Yangtze River Bridge and Yellow Crane Tower. Over 2,300 attendees, including over 2,100 registrants, 50 faculty and staff volunteers, and over 200 student volunteers from the China University of Geosciences, Wuhan, attended the conference.

CCC2018 was sponsored by the Technical Committee on Control Theory (TCCT) of the Chinese Association of Automation and Systems Engineering Society of China and locally organized by the China University of Geosciences. The conference was also cosponsored by several organizations, both domestic and abroad, including



Yellow Crane Tower is a famous and traditional Chinese tower located in Wuhan, the host city of the Chinese Control Conference 2018.

the Academy of Mathematics and Systems Science of Chinese Academy of Sciences (CAS); the China Society for Industrial and Applied Mathematics; Huazhong University of Science and Technology; Wuhan University of Science and Technology; Hubei Association of Automation; the Asian Control Association; IEEE Control Systems Society (CSS); Institute of Control, Robotics and Systems, Korea; and the Society of Instrument and Control Engineers, Japan. Many distinguished guests from these sponsoring and cosponsoring organizations

and more than 100 consultants and committee members of the TCCT attended the conference.

### TECHNICAL PROGRAM

A total of 2704 papers were submitted to CCC2018, with authors from 24 countries and regions including Australia, Canada, China (including Hong Kong, Macau, and Taiwan), Egypt, France, Germany, India, Iran, Japan, Republic of Korea, Malaysia, The Netherlands, Poland, Russia, Singapore, Spain, Sweden, Turkey, the United Kingdom, and the United States. After a rigorous peer review process organized by the Conference Program Committee, a total of 1,840 papers were accepted and included in the proceedings. These proceedings are included in the IEEE Conference Publication Program with the IEEE catalog number CFP1840A.

Seven distinguished scientists delivered plenary lectures. Their speeches, on timely topics, were

» “Towards a Theoretical Foundation of PID Control” by Lei Guo, CAS

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Xin Chen, Program Committee chair, presides over the opening ceremony of the conference.



Yanxin Wang, president of China University of Geosciences, addresses the opening ceremony.



Min Wu, general chair, speaks during the conference's opening ceremony.

- » “Beyond Consensus and Polarisation: Complex Social Phenomena in Social Networks” by Brian D.O. Anderson, Australian National University, Canberra
- » “Attitude Control of Multi-Rigid-body Systems: From Synchronization to Intrinsic Formation” by Xiaoming Hu, KTH Royal

Institute of Technology, Stockholm, Sweden

- » “Network Science and Kuramoto Oscillators” by Francesco Bullo, University of California, Santa Barbara
- » “Broad Learning: A Paradigm Shift in Discriminative Incremental Learning” by Philip Chen, University of Macau, China

- » “Real Haptics” by Kouhei Ohnishi, Keio University, Tokyo

- » “The Certainty Equivalence Principle and the Cooperative Control of Multi-Agent Systems” by Jie Huang, Chinese University of Hong Kong.

These plenary sessions were chaired by Min Wu, Lihua Xie, Yong He, Ji-Feng



(a)



(b)



(c)



(d)



(e)



(f)



(g)

The 2018 CCC plenary speakers: (a) Lei Guo, (b) Brian D.O. Anderson, (c) Xiaoming Hu, (d) Francesco Bullo, (e) Philip Chen, (f) Kouhei Ohnishi, and (g) Jie Huang.



Zhang, Xinping Guan, Jinhua She, and Yiguang Hong, respectively.

In addition to these plenary speeches, there were 162 oral sessions, including 49 invited oral sessions, arranged in 27 parallel tracks, with a total number of 957 oral session papers. There were also four poster sessions. The conference languages are Chinese and English (papers in English sessions were presented in English, and papers in other sessions could be presented in either English or Chinese).

## AWARDS

The following awards were presented at the closing ceremony: the fifth TCCT

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Outstanding Contribution Award, fifth Chen Han-Fu Award, 24th Guan Zhao-Zhi Award, 12th SCIS-CCC Poster Paper Award, CSS Beijing Chapter Young Author Prize, and Outstanding Volunteers Award.

The winner of the fifth TCCT Outstanding Contribution Award was Ji-Feng Zhang, Academy of Mathematics and Systems Science, CAS. The winner

of the fifth Chen Han-Fu Award was Yongchun Fang, Nankai University, China. The winning papers for the 24th Guan Zhao-Zhi Award were “Maximum Capability of Feedback Control for Network Systems” by Bo Li and Guodong Shi and “Efficient Safe Corridor Navigation with Jerk Limited Trajectory for Quadrotors” by Shupeng Lai, Menglu Lan, and Ben M. Chen.



Han-Fu Chen (left), member of the Technical Committee on Control Theory Advisory Committee, presents the TCCT Outstanding Contribution Award to Ji-Feng Zhang.



Ji-Feng Zhang (left), chair of the Evaluation Committee for the Chen Han-Fu Award, presents the award to Yongchun Fang.



Min Wu (center), vice-chair of the Evaluation Committee for the Guan Zhao-Zhi Award, presents the awards.



Zongli Lin (center), chair of the Evaluation Committee for the SCIS-CCC Poster Award, presents the awards.





Francesco Bullo (left), president of CSS, presents the CSS Beijing Chapter Young Author Prize.



A poster session in progress.



(a)



(b)



(c)



(d)



(e)



(f)

The 2018 CCC preconference workshop speakers: (a) Witold Pedrycz, (b) Jinfeng Liu, (c) Jie Chen, (d) Dan Ma, (e) Tian Qi, and (f) Jing Zhu.



Two papers received the 12th SCIS-CCC Poster Paper Award: “Bounded Consensus of Linear Multi-Agent Systems with External Disturbances Through a Reduced-Order Adaptive Feedback Protocol” by Xianwei Li and Sandra Hirche and “Research on the Magnetic Field Generator of Overhauser Magnetic Sensor” by Xiangyu Qiu, Jian Ge, Haobin Dong, Han Li, Wang Luo, Huan Liu, Zhiwen Yuan, Jun Zhu, and Haiyang Zhang.

The winner of CSS Beijing Chapter Young Author Prize was Bingchang Wang from Shandong University, China, with the paper “A Complete Solution to Mean Field Linear Quadratic Control.” A total of 40 students from China University of Geosciences were recognized with the Outstanding Volunteers Award.

## PANEL DISCUSSIONS

Ben M. Chen from the National University of Singapore and Jie Chen from Tongji University, Shanghai, China, organized two plenary panel discussions. “Trend of Unmanned Systems R&D and Industrial Applications” included Hai-Bin Duan from Beihang University, Beijing; Qiang Wu from AVIC Development and Research

Center, China; Lihua Xie from Nanyang Technological University, Singapore; Fu-Min Zhang from the Georgia Institute of Technology, Atlanta; and Guo-Cheng Zhao from Ewatt Technology Co., Ltd., as the panelists. The panel discussed the problems, trends, industrial applications, and future developments in this unmanned aerial vehicle area.

The second panel session, “Talk About Guan Zhao-Zhi Award,” included Yong He, China University of Geosciences; Long Wang from Peking University, Beijing; Bin Xin, Beijing Institute of Technology; and Wen-Xiao Zhao, the Academy of Mathematics and Systems Science, CAS, as the panelists.

Li Yu from Zhejiang University of Technology, Hangzhou, China, and Qianchuan Zhao from Tsinghua University, Beijing, also organized a forum, “Au-

tomation and Control Education.” Quan Pan from the Northwestern Polytechnical University, Xi’an, China; Xianzhong Dai from Southeast University, Nanjing, China; Kemin Zhou from Shandong University of Science and Technology, Qingdao, China; Guanghong Yang from Northeastern University, Shenyang, China; and Hong Wang from Tsinghua University were the speakers.

Chenghong Wang from the National Natural Science Foundation Committee, Beijing, and Yonghua Xiong from the China University of Geosciences organized the forum “Automation, Artificial Intelligence, and Big Data,” which included Jian Chu from Ningbo Industrial Internet Institute, China; Jun Ni from the University of Michigan, Ann Arbor; Zhunga Liu from Northwestern Polytechnical University; and Bo Yang from Shanghai Jiaotong University, China, as the speakers.

**Many individuals, authors, and members of the conference committees made significant contributions to the success of the conference.**



Members of the Technical Committee on Control Theory during the Chinese Control Conference 2018.

**There were over 50 faculty and staff volunteers and 200 student volunteers in orange shirts serving throughout the conference.**



Welcome to the Chinese Control Conference 2019 in Guangzhou.

### PRECONFERENCE WORKSHOPS

Three preconference workshops, organized by Shaoyuan Li, Shanghai Jiao Tong University, China, and Haobin Dong, China University of Geosciences, were held at the Wuhan East Lake International Convention and Exhibition Center.

- » “System Modeling and Control: At the Junction with Data” featured Witold Pedrycz from the University of Alberta, Edmonton, Canada, as a speaker.
- » “Economic Model Predictive Control” highlighted Jinfeng Liu from the University of Alberta as a speaker.
- » “Stability and Stabilization of Time-Delay Systems: An Operator-Theoretic Development” featured Jie Chen from the City University of Hong Kong, China, Dan Ma from the Northeastern University, Tian Qi from South China University of Technology, Guangzhou, and Jing Zhu from the Nanjing University of

Aeronautics and Astronautics, China, as speakers.

### CONCLUDING REMARKS AND AN INVITATION TO CCC2019

Many individuals, authors, and members of the conference committees made significant contributions to the success of the conference. The 300 members of the Program Committee undertook the tasks of reviewing papers, compiling the final program, and editing the book of abstracts and proceedings. Nine program regional chairs were responsible for promoting the event within their respective regions and organizing invited sessions: Tongwen Chen, University of Alberta; Xiaoming Hu, KTH Royal Institute of Technology; Qinglong Han, Swinburne University of Technology, Melbourne, Australia; James Lam, University of Hong Kong, China; Guoping Liu, University of South Wales, Pontypridd, United Kingdom; Wei Ren, University of California, Riverside; Tielong Shen, Sophia University, Tokyo; Xiaohua Xia, University of Pretoria,

South Africa; and Lihua Xie, Nanyang Technological University, Singapore. The organizing committee successfully completed the daunting task of local arrangements. There were over 50 faculty and staff volunteers and 200 student volunteers in orange shirts serving throughout the conference. Their smiles and considerate service provided a pleasant experience for the conference attendees and helped the conference run smoothly.

At the closing ceremony of CCC2018, Xin Chen, Program Committee chair, gave a detailed summary of the conference and expressed sincere thanks to the units and individuals that made contributions to the conference. Renquan Lu, Organizing Committee chair of CCC2019, then reported on the progress of the preparation for the 2019 conference and extended a warm invitation to participate. CCC2019 will be held July 27–30, 2019 in Guangzhou, which is known as a famous historical and cultural city, an international metropolis, and China’s southern gateway to the world. Guangzhou has a unique blend of natural scenery, millennial traditional culture, modern civilization, and delicious local food. More information on CCC2019 is available on the conference website: <http://www.ccc2019.cn/en/index.html>. We look forward to seeing you in Guangzhou next July!

**Zhixin Liu**

*General Secretary, TCCT and CCC2018*

**Qing-Shan Jia**

*Vice-General Secretary, TCCT*

**Ying Qu**

*Secretary, TCCT and CCC2018 Secretariat*