

The 27th Chinese Control and Decision Conference

GENERAL INFORMATION

The 27th Chinese Control and Decision Conference (2015 CCDC) was successfully held in Qingdao, China during May 23-25. 2015 CCDC was co-organized by Northeastern University, China and the Industrial Electronics (IE) Chapter of the IEEE Singapore Section. The local organizer was Qingdao University, China. The conference was technically co-sponsored by IEEE Control Systems Society (CSS), Systems Engineering Society of China (SESC), Chinese Association for Artificial Intelligence (CAAI), and Technical Committee on Control Theory of Chinese Association of Automation.

TECHNICAL PROGRAM

The 2015 CCDC received 1687 full paper submissions from authors from 24 countries and regions. After going through a rigorous reviewing process during which all the members in the Technical Program Committee worked professionally, timely, responsibly and diligently, 1231 papers were included in the technical program for presentation in 116 oral sessions and 9 interactive sessions in the conference. 1052 delegates attended the conference.

In addition to the normal technical sessions, the technical program also included 4 keynote addresses and 9 distinguished lectures covering the state-of-the-art in both theory and applications in control, decision, automation, robotics and emerging technologies. The 4 keynotes were as follows:

1. “*Control and Optimal Control of Boolean Control Networks*” by Maria Elena Valcher, Universita' di Padova, Italy.
2. “*Learning with Strategic Decision Making in Social Media*” by K. J. Ray Liu, University of Maryland, USA.
3. “*Learning Control Applied to Human Motor Skill Learning*” by Iven Mareels, University of Melbourne, Australia.
4. “*Control Theory, Technology and Applications of Complex Nonferrous Metallurgical Processes*” by Weihua Gui, Central South University, China.

Distinguished lectures were delivered by Max Meng of Chinese University of Hong Kong, Hong Kong, China on “*What is Missing from the Mechanically Capable Modern Robots*”, Zhisheng Duan of Peking University, China on “*Two Kinds of Traditional Control Subjects and New Problems*”, Huijun Gao of Harbin Institute of Technology, China on “*Networked Control Systems with Application to Industrial Processes*”,

Xiaoming Hu of Royal Institute of Technology, Sweden on “*Multi-agent Control Systems: Macroscopic Versus Microscopic*”, Derong Liu of University of Illinois at Chicago, USA on “*Dynamical Systems with Saturation Nonlinearities: State-of-the-Art and Future Perspectives*”, Xinzhi Liu of University of Waterloo, Canada on “*Analysis, Control and Stability of Hybrid Systems*”, Peter B. Luh of University of Connecticut, USA on “*A Synergistic Combination of Surrogate Lagrangian Relaxation and Branch-and-Cut for Mixed-Integer Optimization Problems*”, Shyh-Leh Chen of National Chung Cheng University, Taiwan on “*Contouring Control of Multi-axis Motion Systems with Equivalent Contour Errors*”, Yuan Wang of Florida Atlantic University, USA on “*Stability Analysis for Nonlinear Systems with Time-Delays*”.

All sessions, including keynote address sessions, distinguished lectures sessions, oral sessions and interactive sessions, were well attended and produced active discussions. The conference banquet, which included entertainment, was held in the evening of May 24, 2015.

A CD-ROM, containing all the papers presented at the conference, was provided to each registered delegate. The official conference proceedings has been published by IEEE and included in the IEEE Xplore Database.

ZHANG SI-YING (CCDC) OUTSTANDING YOUTH AWARD

The Zhang Si-Ying (CCDC) Outstanding Youth Paper Award serves to recognize Academician Zhang Si-Ying’s highly-regarded perseverance, character and academic contribution. It also serves to inspire, motivate and encourage young scholars in their research. For a paper to be eligible for the award, the first author of the paper must not be older than 35 on the day of award presentation at the conference. The Zhang Si-Ying (CCDC) Outstanding Youth Paper Award winner may get award of 10000 RMB and the certificate, each finalist may get award of 3000 RMB and the Certificate of Finalist.

The Award Committee for the 2015 CCDC was composed of five members: Maria Elena Valcher of Italy, Zhong-Ping Jiang of USA, Changyun Wen of Singapore, Xinhe Xu of China and Guanghong Yang of China.

For the 2015 CCDC, 100 papers were selected for consideration for the “Zhang Si-Ying Outstanding Youth Paper Award” based on reviewers’ comments, nominations, and the evaluations of the Technical Program Committee members. These papers were sent to famous experts including some members of the International Advisory Committee for further evaluation. Based on their evaluations and recommendation, the Technical Program Committee shortlisted the following five papers as the finalists for the Award:

1. “*Invariance Principles for Delay Differential Inclusions*” by Kun-Zhi Liu of

- Dalian University of Technology, Ximing Sun, Wei Wang, and Jun Liu of University of Sheffield;
2. “*Optimal Cooperative Control for Residential Multi-Battery Systems Using Iterative Adaptive Dynamic Programming*” by Qinglai Wei, Guang Shi, Yu Liu, Qiang Guan and Derong Liu of Chinese Academy of Sciences;
 3. “*Leapfrog Multigrid Methods for Parabolic Optimal Control Problems*” by Buyang Li of Nanjing University, Jun Liu and Mingqing Xiao of Southern Illinois University;
 4. “*Adaptive Output-feedback Consensus Protocol Design for Linear Multi-agent Systems with Directed Graphs*” by Yuezhu Lv, Zhongkui Li and Zhisheng Duan of Peking University;
 5. “*On Finite-Horizon Optimal Control of First-Order Plus Time Delay Systems*” by Dawei Shi of Beijing Institute of Technology, and Tongwen Chen of University of Alberta.

During the conference, all the Award Committee members attended the oral presentations of the 5 finalist papers. Each member independently assessed their originality, technical quality and written and oral presentations. On the basis of these assessments, the winners for the 2015 CCDC Zhang Si-Ying Outstanding Youth Paper Award were Kun-Zhi Liu of Dalian University of Technology, Ximing Sun, Wei Wang, Jun Liu of University of Sheffield and Qinglai Wei, Guang Shi, Yu Liu, Qiang Guan, Derong Liu of Chinese Academy of Sciences.

The International Advisory Committee Chair of 2015 CCDC, Si-Ying Zhang presented the award with the certificate of finalist to all the finalists and also presented the award with the certificate to winners during the banquet.

The 28th CHINESE CONTROL AND DECISION CONFERENCE

The 28th Chinese Control and Decision Conference (2016 CCDC) will be held in Yinchuan, China during May 28-30, 2016. Keynote addresses on the state-of-the-art of the theories and applications in control and decision will be delivered by Francis J. Doyle III of University of California at Santa Barbara, USA, Jonathan How of Massachusetts Institute of Technology, USA. The Organizing Committee will invite prominent professors/academicians as distinguished lectures for the 2016 CCDC. Information for the 2016 CCDC will consistently be updated on the conference website: <http://www.ccdc.neu.edu.cn>.

International Technical Program Chairs

Changyun Wen,
Zhong-Ping Jiang

LIST OF FIGURES



Figure 1: ccdc15_OpeningCeremony

Caption: Opening ceremony of 2015 CCDC



Figure 2: ccdc15_Keynote Address Session _Prof Maria Elena Valcher

Caption: Prof Maria Elena Valcher delivering her keynote address



Figure 3: ccdc15_ Keynote Address Session _Prof K. J. Ray Liu
Caption: Prof K. J. Ray Liu delivering his keynote address



Figure 4: ccdc15_ Keynote Address Session _Prof Iven Mareels
Caption: Prof Iven Mareels delivering his keynote address



Figure 5: ccdc15_ Keynote Address Session _Prof Chunhua Yang
Caption: Prof Chunhua Yang delivering her keynote address instead of Weihua Gui



Figures 6: ccdc15_Award
Caption: 2015 CCDC Award Committee Members and Finalists of ZHANG SI-YING Outstanding Youth Award