

The 38th Chinese Control Conference

Pre-conference Workshop 1

Control and Optimization for Networked Systems



Speaker: Hua Geng, Tsinghua University, China

Title: Operation of Large-scale Renewable Energy Conversion System: from unit to Cluster

Abstract: In order to cope with the worsening environmental and energy crisis, it has become an inevitable trend to replace fossil-based traditional (thermal) power generation with renewable energy such as wind power and photovoltaic power. Compared with traditional power generation, renewable energy generation has the characteristics of clustering, distribution and power electronic based, which brings many technical challenges in terms of control and optimization. This talk discusses the challenges towards safe and reliable operation of large-scale renewable energy cluster from the perspective of individual synchronization and cluster cooperation.

Biography: Hua Geng received his Ph.D. degree in control theory and application from Tsinghua University, Beijing, China in 2008. From 2008 to 2010, he was a Postdoctoral Research Fellow with Ryerson University, Canada. He joined Automation Department of Tsinghua University in June 2010 and now is a tenured Associate Professor.

His current research interests include renewable energy conversion systems, Flexible AC transmission system (FACTS), micro-grid and digital control on power electronics. He has been the principle investigate (PI) or Co-PI for more than 20 projects, including National Excellent young scholar, Key Program and China-UK joint Program of National Science Foundation of China (NSFC), National Key R&D Program of China.

Dr. Geng has published more than 150 technical papers, authored a China Machine Press book, and holds 10 issued Chinese patents. He was granted “Delta Young Scholar Award” by Delta Environmental and Educational Foundation in 2014 and “Young Professional Award” by China Power Supply Society (CPSS) in 2013.

Dr. Geng is an IET Fellow, IEEE Senior Member, Chair of the Youth Working Committee of CPSS, Standing Director of CPSS. He serves as the editor of IEEE Trans. on Energy Conversion, IEEE Trans. on Sustainable Energy and IEEE Power Engineering Letters, the associate editor of IEEE Trans. on Industry Applications, Control Engineering Practice, Chinese Journal of Electrical Engineering and CPSS trans. on Power Electronics and Applications.