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Automatic
Control and
Systems
Engineering

The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

Consensus-Based Distributed Optimization with Application to Power Systems

Professor Zhengtao Ding

*Professor of Control Systems, School of Electrical and Electronic Engineering,
The University of Manchester, UK*

Wednesday, 27 September 2017 at 14:00

LT02, Sir Henry Stephenson Building

Abstract

In this network-connected world, many tasks require coordination and cooperation of subsystems/agents via network connection. The completion of those tasks, such as consensus control, formation control, optimal coverage and distributed optimization, relies on proper interplay of system dynamics and network connections. This talk will cover some fundamental concepts in consensus control and control of networked connected systems, and other several aspects of the above mentioned talks based on the speaker's own involvements. This talk will cover consensus-based distributed optimization algorithms in some details, and in particular, the speaker will demonstrate several applications of distributed optimization algorithms to power system problems, including optimization of charge station for electrical vehicles, and applications for optimal resource management of micro-grids.

Biography

Zhengtao Ding received his B.Eng. degree from Tsinghua University, Beijing, China, and the M.Sc. degree in systems and control and the Ph.D. degree in control systems from the University of Manchester Institute of Science and Technology, Manchester, U.K. After working as a Lecturer with Ngee Ann Polytechnic, Singapore, for ten years, he joined, as a lecturer in 2003, The University of Manchester, Manchester, U.K., where he is now Professor of Control Systems. His main teaching and research duties are with the School of Electrical and Electronic Engineering, and he also leads the Sino-UK Joint Advanced Control Laboratory in the university. He is the author of a book *Nonlinear and Adaptive Control Systems* and has published over 200 research articles. His research interests include nonlinear and adaptive control theory and their applications, more recently control of networked connected dynamic systems and distributed optimization. Prof. Ding serves as an Associate Editor for *IEEE Transactions on Automatic Control*, *IEEE Control Systems Letters*, *Transactions of the Institute of Measurement and Control*, *Control Theory and Technology*, *Mathematical Problems in Engineering*, *Unmanned Systems and International Journal of Automation and Computing*. He is a member of IEEE Technical Committee on Nonlinear Systems and Control, IEEE Technical Committee on Intelligent Control, and IFAC Technical Committee on Adaptive and Learning Systems.

*Light refreshments will be served in the foyer of
the Sir Henry Stephenson Building*