

# Control over Complex Networks

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## Abstract

This presentation offers a brief overview of the recent progress in both complex dynamical networks and coordinated control of multi-agent systems. Background and motivation will be introduced; main ideas and key techniques will be discussed. Three basic complex network models, i.e., random-graph networks, small-world networks, and scale-free networks will be introduced. Complex dynamics and some effective control strategies over different types of networks, such as pinning control and flocking algorithms, will be discussed with comparison. To that end, a couple of successful simulation examples will be demonstrated.

## About the speaker

Professor Chen received the MS degree in Computer Science from Sun Yat-sen University, China in 1981, and the PhD degree in Applied Mathematics from Texas A&M University, USA in 1987, with Post-Doctorate research experience in nonlinear dynamics and controls at Rice University thereafter. He currently is a Chair Professor and the Director of the Centre for Chaos and Complex Networks at the City University of Hong Kong, prior to which he was a tenured Professor at the University of Houston, USA.

Professor Chen is an IEEE Fellow (January 1997). He serves as the Deputy Chief Editor for the IEEE Transactions on Circuits and Systems, Part II (2004-05) and Part I (2006-07), and will be the Chief Editor for the IEEE Circuits and Systems Magazine (2008-09).

**Date:** 2:00pm, Monday, 10 September 2007

**Venue:** LR11, Baker Building, Department of Engineering, University of Cambridge, Trumpington Street, Cambridge

**Free Admission - All Welcome**

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