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SEMINAR SERIES ON CHAOS, CONTROL AND COMPLEX NETWORKS

How Complex is a Complex Network?

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Date and Time: Friday, 21 November 2008, 4:30pm – 5:30pm

Venue: Room B6605, City University of Hong Kong

Reception starts at 4:15pm

(Language: **English**)

Abstract

The structural and organizational complexity under the framework of network science has now reached almost every field imaginable, from genetics and social networks to internet and stock markets. The application of complex network to these wildly different domains has led to many interesting new insights. Here we show that the aspirations from other fields like nonlinear system theory in turn provide tools that can deepen our understanding of a complex network. In particular, we will address two problems. One is how to measure the complexity of a complex network, and the other is about introducing a multiscale methodology in community detection. We find very interesting results through these new endeavors, like that the bio-networks (protein, metabolic and neural networks) are organized through a universal principle where the needs to reduce complexity or constraint of energy consumption compromise with the evolutionary forces.

About the Speaker

Dr. Zhang Jie got his PhD from EIE Department of Hong Kong Polytechnic University in 2008, where he is now holding a University Postdoc position. His research interests include nonlinear time series analysis to bio-science, complex networks and complex biological systems, bioinformatics and computational biology.