

# 学术报告会

时间: 2012年12月19日(周三)10:00-11:00

地点: 电院群楼2-410会议室

## Network Reconstruction Using Dynamical Structure Functions

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### Abstract:

In this talk, we will firstly introduce network reconstruction problem and review a number of ODE-based approaches. Motivated by the gap between input-output data and underlying network structure, we define a new representation: dynamical structure functions, which encode structural information. Furthermore we explore the properties of such a representation for solving the reconstruction problem. Moreover, we propose and study a number of theoretical problems: identification, realisation, reduction, etc. for dynamical structure functions and show that how these theoretical results can shed light on network reconstruction problems. Finally we illustrate the results on a number of in-silico examples. I may also talk about some of our recent results in minimum-time consensus and illustrate how these results can help in the understanding of complex social networks, if time permits.

### Biography:

**Ye Yuan** was born on October 1986. He received his B.Eng. degree (Valedictorian) under the supervision of Prof. Yugeng Xi from the Department of Automation, Shanghai Jiao Tong University in 2008, M. Phil. and Ph.D. under the supervision of Dr. Jorge Goncalves from the Department of Engineering, Cambridge University in 10.2009 and 2.2012 respectively. Ye was a visiting student at UNM, HKUST, LCSB, Lund and Caltech. His research interest lies in the mathematical control theory with applications to network and biology. He is the recipient of Dorothy Hodgkin Postgraduate Awards, Microsoft Research PhD Scholarship, Cambridge Overseas Scholarship (twice), Chinese Government Award for Outstanding Students Studying Abroad and Henry Lester Scholarship (four times), Best Paper Finalist of IEEE ICIA and a number of travel awards from IEEE, EECI, Microsoft, etc..