

Presents the Summer 2013 EECS Seminar Series

Dr. Alireza Seyedi

Department of EECS, University of Central Florida

“Dynamics and Control of Complex Networks: Analysis, Design and Scaling Laws”
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ABSTRACT

Complex networks of dynamical systems appear in an array of applications ranging from engineering (the smart grid) to statistical physics (plasma) to social sciences (opinion dynamics in crowds). While these networks have been the subjects of attention for decades, the study of their dynamics is still ongoing and their control is largely understudied. In this talk we will discuss our recent results and ongoing work on the dynamics and control of complex networks. We will address key questions such as: *How can the behavior of a complex network of dynamical systems be described based on local (node) and global (topology) characteristics? How can we design a sparse control network to stabilize a complex plant network? How does the complexity of the control network scale with the size of the plant network?*

BIOGRAPHY

Alireza Seyedi is a Visiting Assistant Professor in the Department of Electrical Engineering and Computer Science at the University of Central Florida. He has been with the department since August of 2012. Prior to that, he worked at the University of Rochester and at Philips Research North America. He received his PhD and MS degrees from Rensselaer Polytechnic Institute, both in Electrical Engineering, in 2004 and 2000 respectively. He received his BS degree, also in Electrical Engineering, from Sharif University of Technology, Tehran, Iran, in 1997. His research interests are in the general area of convergence of communications, control, and network theories. He currently works on control and decision for networked systems, decision and control for systems with stochastic sources of energy, energy harvesting for communications and cognitive radios and networks.