

TALK ANNOUNCEMENT

Seminar Series: The Science of Complex Networks (description below)

Speaker: Prof. Jim Thorp, Head of Department, Electrical and Computer Engineering,
Virginia Tech

Title: Models of Cascading Dynamics in Power Systems

Abstract: Please see below.

Date & Time: Wednesday, October 19, 2005. 4:00-5:00 PM

Location: CRC, Building XV, Conference room 2018

Web: <http://ndssl.vbi.vt.edu/seminars>

Abstract

As power system loading increases, larger blackouts due to cascading outages become more likely. Investigation of models used to determine the critical loading at which the average size of blackouts increase sharply is presented. Three different models are discussed, including two simulations of cascading outages in electric power systems. One is a hidden failure model and the other, OPA, was developed to assess the possibility of self-organized criticality in cascading outages. An analytic model of probabilistic failure is also described.

Seminar Series: "The Science of Complex Networks"

This seminar series is organized by the group NDSSL at VBI (<http://ndssl.vbi.vt.edu>). The theme of the seminar is mathematical and computational aspects of dynamics over large graphs. Examples include the dynamics on networks in communication, urban traffic systems, and networks arising in biological systems such as the molecular networks in the genome and the immune system.

The systems and network models that come from these various areas describe very different phenomena and dynamics and may seem to have little in common. Contrary to this intuition, there are large classes of models with fundamental similarities in both structure and dynamics. This common and generic structure has already motivated research, and is an extremely active area of current research.

The seminars will have a formal flavor, and at least proof ideas and outlines will be encouraged. Presentations of experimental data and findings displaying interesting phenomena that point to possible general results are also welcome.