

**North Carolina State University
Operations Research**

OR 601/801

**Tuesday, October 6, 2009
4:30 p.m.
218 Daniels Hall**

**Study on a General AIMD Model
of Transmission Control Protocol**

**Dr. Min Kang
NCSU Department of Mathematics**

Abstract

In a general AIMD (additive increase multiplicative decrease) model of transmission control protocol (TCP) used in internet traffic congestion management, the time-dependent data flow vector $\mathbf{x}(t)$ undergoes a biased state-dependent random walk on two distinct scales. We provide a complete study of the process (steady state, long time behavior (phase transition), mean field limit, scaling limit and the one particle analysis as well as the recurrence and ergodicity of the continuous model).

Refreshments will be served in Daniels Hall Room 401 starting at 4:00 p.m.