Applied Dynamical Systems seminar

Monday, September 23, 2013

HH-3017
3 p.m.

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The Equilibrium and Sliding Motion in an Internet Congestion Control Model with Dynamics Routing

Abstract:

We consider an Internet congestion control system which is presented as a group of differential equations with time delay, modeling the random early detection (RED) algorithm. We provide the result on the existence of the equilibrium and the boundedness of the solution. Also, we implement the model by route switch mechanism, based on the minimum delay principle, to model the dynamic routing. For the simple network topology, we show that the Filippov solution exists under some conditions on parameters. For the case with a single user and two alternative links, we prove that the discontinuous boundary, or equivalently the sliding region, always exists and is locally attractive. This result implies that for some cases the dynamic routing under consideration maydeviate from the purpose of the original design.

Coffee and cookies will be served.
Seminar website: http://www.math.mun.ca/~shuz/seminars.html

--------------All are welcome-------------------