McMaster University   University of Toronto   University of Waterloo

THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

GEOMETRIC MECHANICS SEMINARS

SPEAKER:

WOLFGANG KLIEMANN
Iowa State University

On the Topic:

Chaos, Noise and Control of Dynamical Systems

Dynamical systems with bounded (time varying) perturbations of the dynamics can be viewed as a flow over an (infinite dimensional) base space. The perturbations can be interpreted as controls, random excitations (with a flow invariant measure on the base space), or as time varying L(infinity) perturbations. This talk provides a unified view of these systems, and presents results on the equivalence of control and chaos, on global analysis of perturbed systems, approximations of (chaotic) attractors, and reliability aspects of randomly excited systems. The key mathematical ingredients are ergodic theory, characterizations of chain recurrent flows, and nonlinear geometric control theory.

Tuesday, April 6, 1993

3:30 pm, room 3018

at

The Fields Institute