



McMaster University



University of Toronto



University of Waterloo

THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

**Lecture Series on
Dynamical Systems Methods in Partial Differential
Equations and Mechanics**

SPEAKER:

Edriss S. Titi
University of California at Irvine

On the Topic:

On the Long-time Dynamics for Dissipative PDE's

In this talk we will discuss the long-term behavior of solutions to dissipative evolution equations. Such equations include the Navier-Stokes, Cahn-Hilliard, Kuramoto-Sivashinsky, complex Ginzburg-Landau, etc. Even though these evolution equations represent infinite dimensional dynamical systems their long-term dynamics are finite dimensional. To illustrate this fact we will show that these equations have finite numbers of determining nodes and in most cases finite dimensional inertial manifolds. Moreover, we will tie these concepts, of determining nodes and inertial manifolds, to the implementation of the Taken's embedding theorem by experimentalists.

Friday, April 2, 1993

9:30 -10:30 am, room 3018

at

The Fields Institute