

Graduate Seminar

First Speaker:

Sarah Aljaryan

Memorial University

Thursday, March 13

1:00 p.m., HH-3017

The Belousov-Zhabotinsky Reaction Model

Abstract:

The Belousov-Zhabotinsky reaction (for short, BZ-reaction) is an oscillating chemical reaction that marks the beginning of modern nonlinear chemical dynamics and was first studied by Boris Pavlovich Belousov (1893-1970). A simplified model (Lengyel-Epstein) of the BZ-reaction is studied using the techniques of nonlinear dynamics for 2D-systems. We show the existence of a positive equilibrium point for this model, and we find a condition where this equilibrium point is asymptotically stable as well as where it is unstable. Moreover, we show that the model admits a stable limit cycle when the equilibrium point is unstable.

Second Speaker:

Martin Konenberg

Memorial University

Spectral Theory and its Application to Open Quantum Systems

Abstract:

In this talk we discuss return to equilibrium for a simplified, quantum mechanical model. For this model we present the basic ideas of the spectral theory of self-adjoint operators.