Graduate Seminar

Speaker

Dr. Graham Cox
Memorial University

Thursday, October 5, 2017
1:00-2:00pm, HH-3017

A symplectic approach to selfadjoint eigenvalue problems

Abstract:
The eigenvalues and eigenfunctions of the Laplacian are of great theoretical and practical interest. I will describe a new approach to this problem in which the eigenvalue equations are related to topological invariants in an infinite-dimensional symplectic vector space. This allows one to use topological ideas, in particular homotopy invariance, to count eigenvalues and describe qualitative properties of the associated eigenfunctions. This work incorporates ideas from PDE, functional analysis, dynamical systems, and algebraic topology.