MONDAY, OCTOBER 29

AIMS LAB SEMINAR
11:30-12:30 pm in HH/403
Speaker: Lorena Aguirre Salazar, McMaster University
Title: On loss of compactness when minimizing two functionals related to the TFDW model
Abstract: The TFDW (Thomas-Fermi-Dirac-Weisacker) model has been used to describe configurations of molecular systems with minimal energy and a prescribed number of electrons. In this talk, we consider a generalization of this model and discuss some results concerning two functionals based on the TFDW model.

ALGEBRA SEMINAR
2:30-3:20 pm in HH/312
Speaker: Sergio Da Silva, Manitoba
Title: On the Gorensteinization of Schubert varieties via boundary divisors
Abstract: A variety being Gorenstein can be a useful property to have when considering questions in birational geometry. Although Schubert varieties are Cohen-Macaulay, they are not Gorenstein in general. I will describe a convenient way to find a "Gorensteinization" for a Schubert variety by considering only one blow-up along its boundary divisor. We start by reducing to the local question, one involving Kazhdan-Lusztig varieties. These affine varieties can be degenerated to a toric scheme defined using the Stanley-Reisner ideal of a subword complex. The blow-up of this variety along its boundary is now Gorenstein. Carefully choosing a degeneration of the blow-up allows us to extend this result to Schubert varieties.
TUESDAY, OCTOBER 30

STATISTICS SEMINAR
3:30-4:30 pm in BSB/105
Speaker: Narayanaswamy Balakrishnan, McMaster University
Title: Multivariate Stochastic Comparisons in Actuarial Science and Applications
Abstract: In this talk, I will first introduce the notions of univariate stochastic orderings, a technique by which two random variables can be compared. I will then describe some multivariate orderings. I will then consider the total claim amount from two portfolios in an actuarial setup and apply these univariate and multivariate orderings to present some results. Finally, I will also present a multivariate stochastic ordering result for the whole set of order statistics drawn from a distribution. I will present some illustrative examples throughout to explain the results obtained.

WEDNESDAY, OCTOBER 31

SCIENTIFIC COMPUTING STUDENT SEMINAR
12:30-1:30 pm in LSB/B130E
Speaker: Tyler Wilson, Fields Institute
Title: Quantum Machine Learning
Abstract: As quantum computers increase in capacity, and as machine learning techniques are applied in every corner of society, there is growing interest in finding ways to combine the two disciplines to harness the power in each. In this talk I will briefly discuss the state of quantum computing, the quantum machine learning landscape, and highlight a few tantalizing results and future directions.

Refreshments will be served

Please click here for more information

FRIDAY, NOVEMBER 2

MODEL THEORY SEMINAR
12:30-1:30 pm in HH/410
Speaker: Aaron Crighton, McMaster University
Title & Abstract: tba

PDE/ANALYSIS SEMINAR
1:30-2:30 pm in HH/410
Speaker: Dario Valdebenito, McMaster University
Title: Some generic properties of Schrödinger operators with radial potentials
Abstract: A Schrödinger operator is given by the linear part of an elliptic PDE. Properties such as nonresonance of eigenvalues and linear independence of powers of eigenfunctions appear in contexts such as KAM theory and optimal control (and other problems in PDE). I will talk about how these properties are “generic” for Schrödinger operators with radial potentials acting on the space of radially symmetric functions (on the entire space) in $L^2$. 