Mathematics, Statistics, and Computer Science   **@ UIC**

Analysis and Applied Mathematics Seminar

Rigidity of Random Schrödinger Eigenvalues

Pierre Yves Gaudreau Lamarre (University of Chicago)

Abstract: In quantum mechanics, the energy levels of microscopic physical systems (at the atomic or subatomic scale) correspond to the eigenvalues of a class of linear operators called Schrödinger operators. Therefore, one of the most fundamental problems in modern mathematical physics is to understand the spectrum of general Schrödinger operators.

In this talk, we are interested in Schrödinger operators perturbed by random noises. More specifically, we are interested in the rigidity of the spectrum of random Schrödinger operators; that is, the observation that the spectrum of some random operators has essentially the same structure before and after adding a random perturbation.

We will discuss a new approach to study this rigidity phenomenon that is based on the deep connections that exist between the spectral theory of Schrödinger operators and the solutions of parabolic PDEs. This talk is based on joint works with Promit Ghosal, Wenxuan Li and Yuchen Liao.''

Monday, March 13 at 4:00 PM in 1227 SEO