Laure Dumaz, Université Paris Dauphine, France

September 28 @ 4:30 pm - 5:30 pm UTC+4

Title: “Localization of the continuous Anderson hamiltonian in 1-d and its transition towards delocalization”.

Abstract: We consider the 1-d random Schrodinger operator – d^2/d^x^2 + B’(x) on an interval of size L where the potential B’ is a white noise. We study its entire spectrum in the large L limit. We prove the joint convergence of the eigenvalues and of the eigenvectors and describe the limiting shape of the eigenvectors for all energies. When the energy is much smaller than L, we find that we are in the localized phase and the eigenvalues are distributed as a Poisson point process. The transition towards delocalization holds for large eigenvalues of order L. In this regime, we show the convergence at the level of operators. The limiting operator is acting on R^2-valued functions and is of the form “J \partial_t + 2*2 noise matrix” (where J is the matrix ((0, -1)(1, 0))), a form which already appeared as a conjecture by Edelman Sutton (2006) for limiting random matrices. Joint works with Cyril Labbé.