Stanford University
Departments of Mathematics and Statistics

PROBABILITY SEMINAR

4:30pm, Monday, November 30, 2015
Sequoia Hall Room 200
Cookies served at 4pm, 1st floor Lounge.

Speaker: Li-Cheng Tsai  
Department of Mathematics,  
Stanford University

Title: Infinite Dimensional Stochastic Differential Equations for Dyson’s Brownian Motion

Abstract:

Dyson’s Brownian Motion (DBM) describes the evolution of the spectra of certain random matrices, and is governed by a system of stochastic differential equations (SDEs) with a singular, long-range interaction. In this talk I will outline a construction of the strong solution of the infinite dimensional SDE that corresponds to the bulk limit of DBM. This is a pathwise construction that allows an explicit space with generic configurations. The ideas used further lead to a proof of the pathwise uniqueness of the solution and of the convergence of the finite to infinite dimensional SDE.