概率论系列报告

报告题目(Title)：Scaling limits of interacting diffusions in domains

报告人(Speaker)：　陈振庆 教授 University of Washington

时间(Time)：　6 月 13 日(周五)上午 10:30-11:30

地点(Venue)：北京大学理科一号楼 1418

摘要 (Abstract)：Interacting particle models can be used to gain understanding of the emergence of macroscopic phenomena from microscopic laws of nature. In this talk, I will introduce and discuss a class of interacting particle systems that can model the transport of positive and negative charges in solar cells. To connect the microscopic mechanisms with the macroscopic behaviors at two different scales of observations, we prove the hydrodynamic limits and the fluctuation limits for the systems. In other words, we establish the law of large numbers and the central limit theorem, respectively, for the time-trajectory of the particle densities. The hydrodynamic limit is a pair of deterministic measures whose densities solve a coupled nonlinear heat equations, while the fluctuation limit can be described by a Gaussian Markov process that solves a stochastic partial differential equation.

　　This is joint work with Louis Fan.

欢迎参加