LINAN CHEN, McGill University *Stochastic Kimura Equation*

Originated from population genetics, the classical Kimura equation is a degenerate diffusion equation that has been well studied with both analytic and probabilistic methods. In this talk we consider the stochastic variations of one-dimensional Kimura equations perturbed by a class of space-time Gaussian noise potentials. These stochastic Kimura equations can be seen as degenerate analogs of the parabolic Anderson model. We will discuss results on existence, uniqueness, moments, and continuity for the solution to the stochastic Kimura equation, with a particular emphasis on how the stochastic potential and the degeneracy in the diffusion operator jointly affect the properties of the solution near the degenerate boundary. This work is joint with Roland Riachi.