Yuki Suzuki (Keio University, Japan)

Title: Limit theorems for a diffusion process with a Brownian potential including a zero potential part

Abstract: A diffusion process with a Brownian potential including a zero potential part is considered. The limiting behavior of the process as time goes to infinity is studied. The maximum process and the minimum process of the diffusion process are also investigated.

Ryokichi Tanaka (Tohoku University, Japan)

Title: Random walks on groups of exponential volume growth

Abstract: We study a discrete random walk on a certain solvable Lie group Sol of exponential volume growth. The boundary behavior of the random walk highly depends on the step distribution μ. We show that the harmonic measure ν on the boundary can be both regular and singular with respect to Lebesgue measure according to the random walks we consider. We will emphasize the connection to "Bernoulli convolutions". The talk is based on the joint work with Jérémie Brieussel (Université Montpellier).

Kenkichi Tsunoda (Tokyo University, Japan)

Title: Hydrodynamic limit for a certain class of two-species zero-range processes

Abstract: In 2003, Großkinsky and Spohn studied several-species zero-range processes and gave a necessary and sufficient condition for translation invariant product measures to be invariant under such processes. Based on this result, they investigated the hydrodynamic limit. In this talk, we consider a certain class of two-species zero-range processes which are outside of the family treated by Großkinsky and Spohn. We prove a homogenization property for a tagged particle and apply it to derive the hydrodynamic limit under the diffusive scaling.