

Probability Seminar

Organizer: Christian Gromoll & Tai Melcher

Monday, 2:00–3:00pm, Kerchof 326

Sep 24 **Amarjit Budhiraja, UNC**

Large deviations for small noise infinite dimensional stochastic dynamical systems

The large deviations analysis of solutions to stochastic differential equations and related processes is often based on approximation. The construction and justification of the approximations can be onerous, especially in the case where the process state is infinite dimensional. In this work we show how such approximations can be avoided for a variety of infinite dimensional models driven by some form of Brownian noise. The approach is based on a variational representation for functionals of Brownian motion. Proofs of large deviations properties are reduced to demonstrating basic qualitative properties (existence, uniqueness, and tightness) of certain perturbations of the original process. This is a joint work with P.Dupuis and V.Maroulas.