# Some properties for evolution systems under random perturbations

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## Abstract

In this presentation I plan to show some basic properties for the evolution systems with random noise. The variational framework is used here to analyze the behavior of this type of systems. We can prove some large deviations result for the systems with small noise, and also some ergodic, contractive and compact properties for the corresponding transition semigroups. The main results can be applied to stochastic reaction-diffusion equation, stochastic porous media and fast diffusion equations, stochastic $p$–Laplacian equation as examples.