

Dimension-free Harnack inequalities for the Markov semigroup generated by
reflected SPDEs

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Abstract:

The study of ergodic property for stochastic partial differential equations is very important. One effective tool is the dimension-free (Wang's) Harnack inequality. In this talk, we will establish the dimension-free Harnack inequality for the Markov semigroup relative to the reflected stochastic partial differential equation driven by the space-time white noise, which is one kind of random parabolic obstacle problems and is usually regarded as the infinite dimensional Skorohod equation. As the applications of those inequalities, the hyperboundedness, hypercontractivity, the strong Feller property, uniqueness of invariant measures, and estimates of the transition density will be stated.