

# INVARIANT MEASURES FOR STOCHASTIC FUNCTIONAL DIFFERENTIAL EQUATIONS WITH MARKOVIAN SWITCHING

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**Abstract:** In this talk, the existence and uniqueness of invariant measures for stochastic functional differential equations with Markovian switching and their time discretizations have been discussed. Under certain ergodic conditions, we show that these equations enjoy a unique invariant probability measure and converge exponentially to its equilibrium under the Wasserstein distance. Also, we demonstrate that the time discretization of these equations admit a unique invariant probability measure and share the corresponding ergodic property when the stepsize is sufficiently small. During this procedure, the difficulty arose from the time-discretization of continuous time Markov chain has to be deal with, for which an estimate on its exponential functional is presented.

## References

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