

Computing ergodic limits for SDEs

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In various applicable problems evaluation of ergodic limits for SDEs usually requires to integrate a large dimensional stochastic system over long time intervals. The talk will cover theoretical results for computing ergodic limits and discussion of stochastic geometric integrators, which play an important role in simulating dynamical systems on long time intervals with high accuracy.

This talk is based on a few joint works including [Mattingly, J.C., Stuart, A.M., Tretyakov, M.V. SIAM J. Numer. Anal. V. 48, No 2 (2010), 552-577], [Leimkuhler, B., Matthews, C., Tretyakov, M.V. Proc. R. Soc. A V. 470, No 2170 (2014), 20140120], and [Davidchack, R.L., Ouldrige, T.E., Tretyakov, M.V. New Langevin and gradient thermostats for rigid body dynamics. J. Chem. Phys. V. 142, No 14 (2015), 144114].