Stochastic Symplectic Methods of Stochastic Hamiltonian Systems

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摘要： Plenty of numerical experiments show that stochastic symplectic methods are superior to non-symplectic ones especially in long-time computation, when applied to stochastic Hamiltonian systems. In this talk we first review some basic results on stochastic symplectic methods of stochastic Hamiltonian systems, such as the theory of stochastic generating functions, variational integrators, pseudo-symplectic methods, etc. Then we present the probabilistic superiority of stochastic symplectic methods of stochastic Hamiltonian systems via large deviations principle. (In collaboration with Dr. Chuchu Chen, Dr. Diancong Jin and Dr. Liying Sun)