



**The Hong Kong Polytechnic University
Department of Applied Mathematics**

Colloquium

Probabilistic Superiority of Stochastic Symplectic Methods via Large Deviations Principle

By

**Prof. Jialin Hong
Chinese Academy of Sciences**

Abstract

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).

Date : 31 March 2021 (Wednesday)
Time : 11:00-12:00 (Hong Kong Standard Time GMT +8)
Venue : Online Talk via Zoom (Meeting ID: 954 7094 6579)
Speaker: Prof. Jialin Hong, Chinese Academy of Sciences
Host: Dr. Zhonghua Qiao, The Hong Kong Polytechnic University
Click to join :

<https://polyu.zoom.us/j/95470946579?pwd=N0M2aVJrYk9iVlpTdEgzSXJwSzNldz09>



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