The College of Arts & Sciences
Department of Mathematical Sciences
Colloquium

Professor Xue-Mei Li

Imperial College London
EPFL (Switzerland)

Thursday, November 13, 2025
Campus Rec Center Room 3230
4:00-5:00pm

Long-Range Memory in Stochastic Differential Equations

Autocorrelated stochastic processes have long been observed in time series data and extensively studied in statistics. Yet, only recently has long-range dependence emerged as a central theme in the theory of stochastic differential and partial differential equations. This talk explores the role of long-range temporal and spatial correlations in shaping multi-scale stochastic dynamics. We begin with classical slow/fast systems for stochastic differential equations, traditionally grounded in Markovian frameworks and Itô calculus. We then examine how these foundational tools must adapt when the driving noise exhibits memory.

Refreshments will be served 3:15– 3:45 pm in the Faculty Lounge
4118 French Hall West

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