Hong Kong Consortium of Quantitative Finance

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Hong Kong - Singapore joint Seminar Series in Financial Mathematics/Engineering

SPDE control: recent progress and open problems

Professor Xu Zhang

Sichuan University, China

Abstract

In this talk, I will give a short introduction to control theory for stochastic distributed parameter systems (governed by stochastic differential equations in infinite dimensions, typically by stochastic PDEs). I will explain the new phenomena and difficulties in the study of controllability and optimal control problems for these sort of equations. In particular, I will show by some examples that both the formulation of corresponding stochastic control problems and the tools to solve them may differ considerably from their deterministic/finite-dimensional counterparts, and one has to develop new methods, say, the stochastic transposition method introduced in our previous works, to solve some problems in this field.

About the speaker

Xu Zhang obtained a bachelor's degree from Sichuan University in 1989, and a PhD degree from Fudan University in 1999. His main research interests include control theory, PDEs, and stochastic analysis. Professor Zhang is also a chief/associate editor of various journals, including SIAM J. Control Optim., ESAIM: COCV, Mathematical Control and Related Fields, etc. He has received a number of honors in his career, among which we mention his 2nd class award of Natural Science of China and 45-minute invited talk at the 2010 ICM.

Date

7 July 2022(Thursday) (HK Time)

Time

4:00pm – 5:00pm (HK Time)

Zoom

https://cityu.zoom.us/j/96719722616?pwd=cElUcWtmWVhmR0xCNWJiWWtKcVFYUT09

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