Introduction to Stochastic Calculus and Financial Mathematics

24 – 27 November, 2021 (Online Mode)

Abstract: In this lecture series, we will introduce the fundamentals of stochastic calculus and its applications in financial mathematics. We will establish connections between probabilistic and PDE formulations of stochastic models, and solve problems related to option pricing and portfolio selection. Relevant numerical methods will also be discussed briefly.

Course Module: Tools in Econophysics

Four Lectures

1

24 November, 3.30 - 5.00 PM
Brownian motion, martingales, stochastic calculus

2

25 November, 3.30 - 5.00 PM
Option pricing by replication, equivalent martingale measure
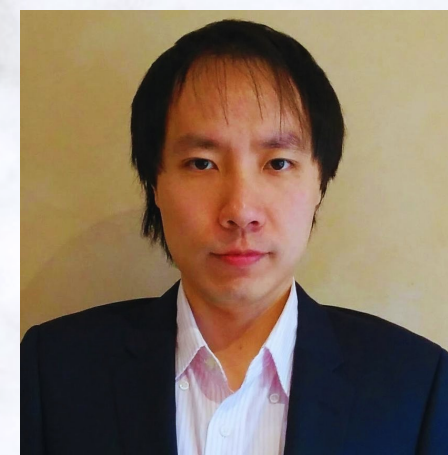
3

26 November, 3.30 - 5.00 PM
Stochastic differential equations, Black Scholes option pricing formula

4

27 November, 3.30 - 5.00 PM
Parabolic PDEs, Feynman-Kac formula, Merton's portfolio problem

Speaker

Dr. Ivan Guo
School of Mathematics, Monash University, Australia

Who can attend: All BS, BTech, MSc, ME/MTech and PhD students
Interested academicians may also attend

Register at: *https://forms.gle/rSCFPXe74Mo9yiUS9*

No Registration Fee

Last Date for Registration: 21 Nov, 2021

Online lecture links will be shared to the registered participants

Contact us: *sparc450econophysics@gmail.com*

About the sponsor

SPARC Project: Development of efficient computational techniques for convection-diffusion-reaction type problems in econophysics

The Scheme for Promotion of Academic and Research Collaboration (SPARC) under the Ministry of Human Resources and Development, Government of India aims at improving the research ecosystem of India's Higher Educational Institutions by facilitating academic and research collaborations between Indian Institutions and the best institutions in the world from 28 selected nations to jointly solve problems of national and/or international relevance. The current lecture series is a part of the above said SPARC project between Monash University and Indian Institute of Technology Ropar.

Convenors

Dr. Manoranjan Mishra
Associate Professor,
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Dr. Chittaranjan Mishra
Assistant Professor,
Department of Mathematics,
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SPARC
Scheme for Promotion of Academic and Research Collaboration