

Online Seminar

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Topic

A neural network-based numerical method for semi-linear PIDEs with applications in high-dimensional option pricing

Date | Time

4 November 2024 (Monday) | 10:00 am – 11:00 am (HK Time)

Meeting ID | Password

872 1594 9456 | 1104

Zoom Link

<https://polyu.hk/PbQIT>

Abstract:

In this talk, we introduce a modern numerical algorithm to approximate semi-linear parabolic partial integro-differential equations (PIDEs) using (random) neural networks, the so-called (random) deep splitting algorithm. Full error analysis and complexity analysis are provided. Furthermore, we present a numerical example in which the (random) deep splitting algorithm is applied to price high-dimensional financial derivatives in a jump-diffusion model. This talk is based on joint work with Ariel Neufeld and Philipp Schmock.