

INTERNATIONAL RESEARCH TRAINING GROUP

Stochastic Models of Complex Processes

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Speaker

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Title

Applications of rough paths theory in numerical scheme

Abstract: We give a short introduction to some basics of rough paths theory, in particular the notions of α -Hölder rough paths, rough differential equations and the enhanced Brownian motion. The local Lipschitz continuity property of the Itô-Lyons map provides a powerful tool for investigating the rates of convergence for numerical schemes solving SDEs. As an example, we find the optimal rates of convergence for the multidimensional Wong-Zakai theorem for SDEs of the form $Y = V(Y) \circ dB$.

Location: MA 041, Straße des 17. Juni 136, TU Berlin

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