ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

Invitation to the Presentation about the Workplacement

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"A numerical study of strong convergence rates for SDEs with discontinuous drift coefficient"

N.1.43 Wednesday, 15 November 2023 10:00 a.m.

Abstract

For stochastic differential equations (SDEs) with Lipschitz continuous drift coefficient and additive noise, the strong convergence order of the most common numerical scheme – the Euler–Maruyama scheme – is known to be 1. In this talk, we consider SDEs with discontinuous drift coefficient and additive noise. In this case, the optimal convergence rate is 3/4. However, this is often not observed in practice. We discuss and reproduce the paper [Göttlich, Lux, Neuenkirch, "The Euler scheme for stochastic differential equations with discontinuous drift coefficient: a numerical study of the convergence rate.", *Advances in difference equations*, 2019]. For this, we consider two different classes of SDEs and estimate the according convergence rates. Finally, we give a short insight into recent research based on our results.

Michaela Hitz and the Department of Statistics look forward to seeing you at the talk!