ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

# Optimality of the randomized Milstein algorithm for solving jump-diffusion SDEs

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N.2.35

## ABSTRACT

We prove the optimality of the randomized Milstein algorithm for solving scalar jump-diffusion stochastic differential equations. For this, we first provide a complete error analysis of the randomized Milstein algorithm for approximating scalar jump-diffusion stochastic differential equations under substantially weaker assumptions than those known in the literature. Then we provide lower bounds for randomized schemes assuming the jump-commutativity condition and conclude optimality. Moreover, we give insight into the multidimensional case and report numerical experiments supporting our theoretical findings.

**We hope to see you there!**