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procedure allows to construct discretization schemes with arbitrary order of convergence.Subjects:Probability (math.PR); Computational Finance (q-fin.CP)MSC classes:65C30, 60G51Cite as:arXiv:1204.4877 [math.PR]

stochastic differential equations

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(or arXiv:1204.4877v1 [math.PR] for this version)

Optimal simulation schemes for Lévy driven

We consider a general class of high order weak approximation schemes for stochastic differential

using a stochastic splitting argument. The resulting error bound involves separate contributions of

the compound Poisson approximation and of the discretization scheme for the Brownian part, and allows, on one hand, to balance the two contributions in order to minimize the computational time,

For driving processes whose L\'evy measure explodes near zero in a regularly varying way, this

and on the other hand, to study the optimal design of the approximating compound Poisson process.

equations driven by L\'evy processes with infinite activity. These schemes combine a compound

Poisson approximation for the jump part of the L\'evy process with a high order scheme for the Brownian driven component, applied between the jump times. The overall approximation is analyzed

Submission history

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