Explicit numerical schemes for SDEs driven by Levy noise and for Stochastic Evolution Equations

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The idea of 'tamed' Euler schemes, which was pioneered by Hutzenthaler, Jentzen and Kloeden [1] and Sabanis [2], led to the development of a new generation of explicit numerical schemes
- for SDEs driven by Levy noise with superlinear coefficients and,
- for stochastic evolutions equations with super-linearly growing operators appearing in the drift.
Moreover, high order schemes (such as Milstein) are established (with optimal rates of convergence) by the natural extension of the aforementioned ideas. Theoretical results on this topic along with relevant simulation outputs will be presented during this talk.

[1] M. Hutzenthaler, A. Jentzen, P.E. Kloeden, Strong convergence of an explicit numerical method for SDEs with non-globally Lipschitz continuous coefficients. Ann. Appl. Probab. 22 (2012) 1611–1641.
[2] S. Sabanis, A note on tamed Euler approximations, Electron. Commun. Probab. 18 (2013), no. 47, 1—10.

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