Random dynamical systems with jumps I

Juan Carlos Pardo Millán (CIMAT, MX)

Cut-off phenomenon for Ornstein--Uhlenbeck processes driven by Lévy processes

Gerardo Barrera, (University of Alberta, CA)

The first passage problem for stable linear delay equations perturbed by power law Lévy noise

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In this talk we present a linear scalar delay differential equation subject to small multiplicative power tail Lévy noise. We solve the first passage (the Kramers) problem with probabilistic methods and discover an asymptotic loss of memory in this non-Markovian system. Furthermore, the mean exit time increases as the power of the small noise amplitude, whereas the pre-factor accounts for memory effects. In particular, we discover a non-linear delay-induced exit acceleration due to a non-normal growth phenomenon. Our results are illustrated for the linear delay oscillator driven by alpha-stable Lévy flights.

Lévy-driven transport equations

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