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Title: Lipschitz minorants of Lévy processes

Abstract:
The $\alpha$-Lipschitz minorant of a function is the greatest $\alpha$-Lipschitz function dominated pointwise by the function, should such a function exist. I will discuss this construction when the function is a sample path of a (2-sided) Lévy process. The contact set is the random set of times when the sample path touches the minorant. This is a stationary, regenerative set. I will provide a description of the excursions of the sample path away from the contact set that is analogous to Itô’s theory for the excursions of a Markov process away from some point in the state space. In particular, I will elucidate the probabilistic structure of both a “generic” excursion and the special excursion that straddles the time zero.