

Non-symmetric jump processes

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Motivated by the literature we consider several peculiar conditions on the heat kernel and the characteristic exponent of a Levy process in \mathbb{R}^d and we show that they are equivalent. Next, we discuss (local) lower bounds for the heat kernel under those conditions. Assuming comparability with an isotropic unimodal Levy process on the level of Levy measures we complement the lower bound and also prove upper bound. The talk is based on a joint work with Tomasz Grzywny.