

AG Analysis & Stochastik

Analysis & Stochastics Seminars

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Asymptotic expansion of the nonlocal heat content

Abstract:

Let $\mathbf{X} = \{X_t\}_{t \geq 0}$ be a Lévy process in \mathbb{R}^d and $\Omega \subset \mathbb{R}^d$ be an open set with finite Lebesgue measure. In this article we consider the quantity $H_\Omega(t) = \int_\Omega \mathbb{P}^x(X_t \in \Omega) \, \mathrm{d}x$ which is called the heat content. We study its asymptotic expansion for isotropic α -stable Lévy processes and more general Lévy processes, under mild assumptions on the characteristic exponent.

The talk is based on a joint work with Tomasz Grzywny (WUST).