Seminar 2023

Math

Spectral heat content for isotropic Lévy processes.

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Abstract: The spectral heat content (SHC) measures the total heat that remains on a domain when the initial temperature is one and the outside temperature is identically zero. When one replaces the Laplace operator in the heat equation with generators of Lévy processes, one obtains SHC for those Lévy processes. Recently, the two-term asymptotic behavior of SHC for isotropic stable processes on bounded C^{1,1} open sets was investigated by Park and Song (EJP 2022). In this talk, we generalize their result to cover Lévy processes with regularly varying characteristic exponent with index in (1,2]. The proof provides a unified approach to the study of SHC and applies to both Brownian motions and jump processes. This is a joint work with Kei Kobayashi (Fordham University).

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