Exit time and survival probability for unimodal Lévy processes

Tomasz Grzywny

Wrocław University of Technology, Poland
`tomasz.grzywny@pwr.edu.pl`

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The basic object of interest in this talk is the expected exit time of the isotropic unimodal Lévy process from a bounded smooth domain for arbitrary starting point. We derive sharp estimates up to the boundary of the set by giving barriers for the ball of arbitrary radius and subharmonic functions in the complement of the ball. We discus applications to estimates of the survival probability in bounded smooth domains and exteriors sets.

References

[1] K. Bogdan, T. Grzywny, M. Ryznar, *Barriers, exit time and survival probability for unimodal Lévy processes*, to appear in Probab. Theory Related Fields, available at: http://arxiv.org/abs/1307.0270