DIRICHLET HEAT KERNEL ESTIMATES FOR ROTATIONALLY SYMMETRIC LÉVY PROCESSES

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Abstract: In this talk I will present some recent results on sharp two-sided estimates for the transition densities of a large class of rotationally symmetric Lévy process killed upon exiting an open set D. When D is a κ-fat open set, the sharp two-sided estimates are given in terms of surviving probabilities and the global transition density of the Lévy process. When D is a $C^{1,1}$ open set and the Lévy exponent of the process is given by $\Psi(\xi) = \phi(|\xi|^2)$ with ϕ being a complete Bernstein function satisfying a mild growth condition at infinity, our two-sided estimates are explicit in terms of Ψ, the distance function to the boundary of D and the jumping kernel of X. The results are the first sharp two-sided Dirichlet heat kernel estimates for a large class of symmetric Lévy processes with general Lévy exponents.

References

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