

PATH PROPERTIES OF FELLER PROCESSES VIA THE SYMBOL

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We study some path properties of Feller and Lévy-type processes which are generated by pseudo-differential operators $-p(x, D)$ with a negative definite symbol $p(x, \xi)$. We are mainly interested in local times, transience/recurrence and short-time LILs. We show how one can use the symbol to give criteria for these properties which resemble the ‘usual’ criteria for Lévy processes where the symbol $p(x, \xi) = \psi(\xi)$ is just the characteristic exponent.

The results were obtained in collaboration with Jian Wang (Fujian Normal University, Fujian, China) and Victoriya Knopova (Glushkov Institute of the Academy of Sciences, Kiev, Ukraine).

REFERENCES

- [1] V. Knopova, R. Schilling: Short-time LIL-type results for Lévy-type processes. In preparation.
- [2] R. Schilling, J. Wang: Some theorems on Feller processes: transience, local times and ultracontractivity. To appear in: *Trans. Am. Math. Soc.* <http://arxiv.org/pdf/1108.3246.pdf>