Minisymposium 3 - Stochastic Processes with Jumps: Theory and applications

3G, 3P, 3U

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Based on joint work with T. Jakubowski, W. Hansen, and T. Byczkowski I will discuss applications of certain far reaching analogues of the triangle inequality in potential theory. The so-called 3G inequality, and the newer 3P and 3U inequalities, yield results on comparability of the Green function, transition probability, and the resolvent within the setup of the theory of additive perturbations of generators. Our focus will be on gradient-type perturbations.

References:

K. Bogdan and T. Byczkowski, Potential theory for the α-stable Schrödinger operator on bounded Lipschitz domains *Studia Math.*, 133(1):53–92, 1999.

K. Bogdan and T. Jakubowski, Estimates of heat kernel of fractional Laplacian perturbed by gradient operators, preprint (2006)

W. Hansen, Uniform boundary Harnack principle and generalized triangle property, *J. Funct. Anal.*, 226(2):452–484, 2005.

P. Kim and R. Song, Two-sided estimates on the density of Brownian motion with singular drift, *to appear in Ill. J. Math.*

Q. S. Zhang, Gaussian bounds for the fundamental solutions of $\nabla(A\nabla u) + B\nabla u - u_t = 0$, *Manuscripta Math.*, 93(3):381–390, 1997.