Mathematics > Probability

Fractional Laplacian with singular drift

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For $\alpha \in (1,2)$ we consider the equation $\partial_t u = \Delta^{\alpha/2} u - r b \cdot \nabla u$, where b is a divergence free singular vector field not necessarily belonging to the Kato class. We show that for sufficiently small $r>0$ the fundamental solution is globally in time comparable with the density of the isotropic stable process

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