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The boundary problems for one class nonlinear parabolic equation with Lévy laplacian

Let H be a real separable Hilbert space and $F(x)$ be a scalar function on H . The Lévy Laplacian is defined by the formula $\Delta_L F(x_0) = \lim_{n \rightarrow \infty} \frac{1}{n} \sum_{k=1}^n (F''(x) f_k, f_k)_H$, where $\{f_k\}_1^\infty$ is an orthonormal basis in H .

In this report we construct a solution of boundary problem and initial-boundary value problem in a fundamental domain $\Omega \cup \Gamma$

$$\frac{\partial U(t, x)}{\partial t} = f(t, \Delta_L U(t, x)) \quad \text{in } \Omega, \quad U(0, x) = U_0(x), \quad U(t, x) = G(t, x) \quad \text{on } \Gamma,$$

where $f(t, \varsigma)$ is a function on R^2 . Note that in the book M.N.Feller [1] we have constructed a solution of the Cauchy problem for this equation.

- [1] M.N.Feller. The Lévy Laplacian. — Cambridge: Cambridge University Press, 2005.
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