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Estimates for the Green function and Characterization of a Certain Kato Class by the Gauss Semigroup in the Half Space

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Abstract:

We establish a $3G$ -theorem for the Green functions $G_{m,n}$ of $(-\Delta)^m$ ($m \geq 1$) on $\mathbb{R}_+^n := \{x = (x_1, \dots, x_n) \in \mathbb{R}^n : x_n > 0\}$, $n \geq 2m - 1$, with Navier boundary conditions $\Delta^j u|_{\partial\mathbb{R}_+^n} = 0$, $0 \leq j \leq m - 1$.

We exploit these results to define a certain Kato class of functions that we characterize by means of the Gauss semigroup on \mathbb{R}_+^n .



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