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The Robin and Wentzell-Robin Laplacians on Lipschitz domains. (English) Zbl 1168.35340
[Semigroup Forum 73, No. 1, 10-30 \(2006\)](#).

Summary: Let $\Omega \subset \mathbb{R}^N$ be a bounded domain with Lipschitz boundary. We prove in the first part that a realization of the Laplacian with Robin boundary conditions $\frac{\partial u}{\partial \nu} + \beta u = 0$ on the boundary $\partial\Omega$ generates a holomorphic C_0 -semigroup of angle $\pi/2$ on $C(\overline{\Omega})$ if $0 < \beta_0 \leq \beta \in L^\infty(\partial\Omega)$. With the same assumption on Ω and assuming that $0 \leq \beta \in L^\infty(\partial\Omega)$, we show in the second part that one can define a realization of the Laplacian on $C(\overline{\Omega})$ with Wentzell-Robin boundary conditions $\Delta u + \frac{\partial u}{\partial \nu} + \beta u = 0$ on the boundary $\partial\Omega$ and this operator generates a C_0 -semigroup.

MSC:

- [35J25](#) Boundary value problems for second-order elliptic equations
- [35J20](#) Variational methods for second-order elliptic equations
- [47D03](#) Groups and semigroups of linear operators

Cited in **29** Documents

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