

Fornaro, Simona; Lorenzi, Luca**Generation results for elliptic operators with unbounded diffusion coefficients in L^p - and C_b -spaces.** (English) [Zbl 1152.47031](#)

Discrete Contin. Dyn. Syst. 18, No. 4, 747-772 (2007).

In this paper, it is proven that for N -dimensional second order elliptic operators with diffusion coefficients growing at most quadratically and drifts growing at most linearly at infinity, there are realizations generating analytic semigroups in L^p (for any p in the interval $[1, +\infty]$) and in C_b (in \mathbb{R}^N). The domain of such generators is explicitly characterized and corresponding results on smooth interior domain with quite general boundary conditions are given. For bounded coefficients, this problem is rather classical. Even for unbounded coefficients, there are various ways of constructing the Markov semigroups.

Reviewer: [Qian Minping \(Beijing\)](#)**MSC:**

- [47D07](#) Markov semigroups and applications to diffusion processes
- [35B50](#) Maximum principles in context of PDEs
- [35J25](#) Boundary value problems for second-order elliptic equations
- [35J70](#) Degenerate elliptic equations

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Cited in **25** Documents**Keywords:**elliptic operators; analytic semigroups in L^p and in C_b ; strongly continuous semigroup; generator of semigroups**Full Text:** [DOI](#)