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Error bounds for exponential operator splittings. (English) [Zbl 0972.65061](#)
BIT 40, No. 4, 735-744 (2000).

The authors obtain error bounds for Strang splittings involving unbounded operators. They apply the results to a numerical method for the Schrödinger equation, in which the Laplacian is discretized by a Fourier method.

Reviewer: [Gerald W.Hedstrom \(Pleasanton\)](#)

MSC:

- [65M15](#) Error bounds for initial value and initial-boundary value problems involving PDEs Cited in **78** Documents
- [65M70](#) Spectral, collocation and related methods for initial value and initial-boundary value problems involving PDEs
- [35Q55](#) NLS equations (nonlinear Schrödinger equations)

Keywords:

Strang splitting; Trotter product; Schrödinger equation; error bounds; exponential operator splittings; unbounded operators; Fourier method

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