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Applications of the Hille-Yosida theorem to the linearized equations of coupled sound and heat flow. (English) [Zbl 1428.35104](#)

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Summary: This paper deals with the initial-value problem for the linearized equations of coupled sound and heat flow, in a bounded domain Ω in \mathbb{R}^N , with homogeneous Dirichlet boundary conditions. Existence and uniqueness of solutions to the problem are established by using the Hille-Yosida theorem. This paper gives a simpler proof than one by *A. Carasso* [Math. Comput. 29, 447–463 (1975; [Zbl 0311.65061](#))]. Moreover, regularity of solutions is established.

MSC:

- [35G46](#) Initial-boundary value problems for systems of linear higher-order PDEs
- [47D06](#) One-parameter semigroups and linear evolution equations
- [35A01](#) Existence problems for PDEs: global existence, local existence, non-existence
- [35A02](#) Uniqueness problems for PDEs: global uniqueness, local uniqueness, non-uniqueness
- [35B65](#) Smoothness and regularity of solutions to PDEs

Cited in 1 Document

Keywords:

[monotone operators](#); [homogeneous Dirichlet boundary conditions](#)

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