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Lax, P. D.; Milgram, A. N.

Parabolic equations.

Contributions to the theory of partial differential equations, pp.
167–190. *Annals of Mathematics Studies, no. 33. Princeton*
University Press, Princeton, N. J., 1954.

The object of this paper is the initial boundary-value problem for the parabolic equation $\partial u/\partial t + Lu = 0$, where L is a real elliptic differential operator of order $2p$ in n variables, which is bounded from below. It is required that u vanish of order p at the boundary of a bounded region in real n -space. This problem is solved by defining a generalized (non-selfadjoint) Friedrichs extension of L , connected with Dirichlet's problem, and applying a theorem of Hille and Yosida [Yosida, *J. Math. Soc. Japan* **1**, 15–21 (1948); MR0028537 (10,462e)]. The differentiability properties of the solution thus obtained are investigated by means of a method given by Friedrichs [Comm. Pure Appl. Math. **6**, 299–326 (1953); MR0058828 (15,430c)]. The object and the methods of this paper are about the same as those of the paper reviewed below.

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