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ERROR ESTIMATES FOR A CLASS OF OPTIMAL CONTROL PROBLEMS OF PARTIAL DIFFERENTIAL EQUATIONS

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Abstract. This paper deals with a class of optimal control problems in which the system is governed by a linear partial differential equation and the control is distributed and with constraints. The problem is posed in the framework of the theory of optimal control of systems. A numerical method is proposed: the state space as well as the convex set of admissible controls are discretized. An abstract error estimate for the optimal control problem is obtained which depends on both, the approximation of the state equation and the space of controls. This theoretical result is illustrated by some numerical examples from the literature.

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