

<<无限维最优化和控制论>>

图书基本信息

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内容概要

This book studies existence and necessary conditions, such as Pontryagin's maximum principle for optimal control problems described by ordinary and partial differential equations. These necessary conditions are obtained from Kuhn-Tucker theorems for nonlinear programming problems in infinite dimensional spaces. The optimal control problems include control constraints, state constraints, and target conditions. Evolution partial differential equations are studied using semigroup theory, abstract differential equations in linear spaces, integral equations, and interpolation theory. Existence of optimal controls is established for arbitrary control sets by means of a general theory of relaxed controls. Applications include nonlinear systems described by partial differential equations of hyperbolic and parabolic type; the latter case deals with pointwise constraints on the solution and the gradient. The book also includes results on convergence of suboptimal controls. H. O. Fattorini is Professor of Mathematics at the University of California, Los Angeles.

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