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Collana	Lecture Notes in Mathematics, , 0075-8434 ; ; 1459
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Soggetti	Control theory - Data processing Mathematical optimization - Computer programs
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Nota di contenuto	Elements of nonlinear analysis -- Semilinear equations -- Variational inequalities -- Free boundary problems.
Sommario/riassunto	The book is devoted to the study of distributed control problems governed by various nonsmooth state systems. The main questions investigated include: existence of optimal pairs, first order optimality conditions, state-constrained systems, approximation and discretization, bang-bang and regularity properties for optimal control. In order to give the reader a better overview of the domain, several sections deal with topics that do not enter directly into the announced subject: boundary control, delay differential equations. In a subject still actively developing, the methods can be more important than the results and these include: adapted penalization techniques, the singular control systems approach, the variational inequality method, the Ekeland variational principle. Some prerequisites relating to convex analysis, nonlinear operators and partial differential equations are collected in the first chapter or are supplied appropriately in the text. The monograph is intended for graduate students and for researchers interested in this area of mathematics.