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Titolo	Applied and Computational Optimal Control : A Control Parametrization Approach // by Kok Lay Teo, Bin Li, Changjun Yu, Volker Rehbock
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Descrizione fisica	1 online resource (581 pages)
Collana	Springer Optimization and Its Applications, , 1931-6836 ; ; 171
Disciplina	519.6
Soggetti	Mathematical optimization Calculus of variations System theory Control theory Differential equations Calculus of Variations and Optimization Systems Theory, Control Differential Equations
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	1. Introduction -- 2. Unconstrained Optimization Techniques -- 3. Constrained Mathematical Programming -- 4. Optimization Problems Subject to Continuous Inequality Constraints -- 5. Discrete Time Optimal Control Problems -- 6. Elements of Optimal Control Theory -- 7. Gradient Formulae for Optimal Parameter Selection Problems -- 8. Control Parameterization for Canonical Optimal Control Problems -- 9. Optimal Control Problems with State and Control Constraints.-10. Time-Lag Optimal Control Problems -- 11. Feedback Control -- 12. On Some Special Classes of Stochastic Optimal Control Problems -- A.1. Elements of Mathematical Analysis -- A.2 Global Optimization via Filled Function Approach. A.3. Elements of Probability Theory - References.
Sommario/riassunto	The aim of this book is to furnish the reader with a rigorous and detailed exposition of the concept of control parametrization and time scaling transformation. It presents computational solution techniques for a special class of constrained optimal control problems as well as

applications to some practical examples. The book may be considered an extension of the 1991 monograph *A Unified Computational Approach Optimal Control Problems*, by K.L. Teo, C.J. Goh, and K.H. Wong. This publication discusses the development of new theory and computational methods for solving various optimal control problems numerically and in a unified fashion. To keep the book accessible and uniform, it includes those results developed by the authors, their students, and their past and present collaborators. A brief review of methods that are not covered in this exposition, is also included. Knowledge gained from this book may inspire advancement of new techniques to solve complex problems that arise in the future. This book is intended as reference for researchers in mathematics, engineering, and other sciences, graduate students and practitioners who apply optimal control methods in their work. It may be appropriate reading material for a graduate level seminar or as a text for a course in optimal control.
