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| Titolo                  | Control and optimization with PDE constraints // Kristian Bredies ...<br>[et. al.], editors  |
| Pubbl/distr/stampa      | New York, : Springer, 2013   |
| ISBN                    | 3-0348-0631-0  |
| Edizione                | [1st ed.]  |
| Descrizione fisica      | 1 online resource (221 p.)   |
| Collana                 | International series of numerical mathematics ; ; 164  |
| Altri autori (Persone)  | ClasonChristian<br>KunischK <1952-> (Karl)<br>WinckelGregory von   |
| Disciplina              | 515.353<br>515/.353  |
| Soggetti                | Mathematical optimization<br>Programming (Mathematics)   |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Note generali           | Description based upon print version of record.  |
| Nota di bibliografia    | Includes bibliographical references.   |
| Nota di contenuto       | Preface -- An Adaptive POD Approximation Method for the Control of Advection-Diffusion Equations (A. Alla and M. Falcone) -- Generalized Sensitivity Analysis for Delay Differential Equations (H. T. Banks, D. Robbins and K. L. Sutton) -- Regularity and Unique Existence of Solution to Linear Diffusion Equation with Multiple Time-Fractional Derivatives (S. Beckers and M. Yamamoto) -- Nonsmooth Optimization Method and Sparsity (K. Ito) -- Parareal in Time Intermediate Targets Methods for Optimal Control Problem (Y. Maday, M -- K. Riahi and J. Solomon) -- Hamilton–Jacobi–Bellman Equations on Multi-Domains (Z. Rao and H. Zidani) -- Gradient Computation for Model Calibration with Pointwise Observations (E. W. Sachs and M. Schu) -- Numerical Analysis of POD A-Posteriori Error Estimation for Optimal Control (A. Studinger and S. Volkwein) -- Cubature on C1 Space (G. Turinici) -- A Globalized Newton Method for the Optimal Control of Fermionic Systems (G. von Winckel) -- A Priori Error Estimates for Optimal Control Problems with Constraints on the Gradient of the State on Nonsmooth Polygonal Domains (W. Wollner). |
| Sommario/riassunto      | Many mathematical models of physical, biological and social systems involve partial differential equations (PDEs). The desire to understand  |

and influence these systems naturally leads to considering problems of control and optimization. This book presents important topics in the areas of control of PDEs and of PDE-constrained optimization, covering the full spectrum from analysis to numerical realization and applications. Leading scientists address current topics such as non-smooth optimization, Hamilton–Jacobi–Bellmann equations, issues in optimization and control of stochastic partial differential equations, reduced-order models and domain decomposition, discretization error estimates for optimal control problems, and control of quantum-dynamical systems. These contributions originate from the “International Workshop on Control and Optimization of PDEs” in Mariatrost in October 2011. This book is an excellent resource for students and researchers in control or optimization of differential equations. Readers interested in theory or in numerical algorithms will find this book equally useful.

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