1. Record Nr. UNINA9910778072103321

Titolo	Geometric control and nonsmooth analysis [[electronic resource]] : in honor of the 73rd birthday of H. Hermes and of the 71st birthday of R. T. Rockafellar / / edited by Fabio Ancona ... [et al.]
Pubbl/distr/stampa	Singapore, : Hackensack, NJ, : World Scientific, c2008
ISBN	981-277-607-9
Descrizione fisica	1 online resource (376 p.)
Collana	Series on advances in mathematics for applied sciences ; v. 76
Altri autori (Persone)	AnconaFabio <1964-> HermesHenry <1933->RockafellarR. Tyrrell <1935->
Disciplina	515/.642
Soggetti	Control theory - Research Nonsmooth optimization - Research Systems engineering - Research
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 and index.
Nota di contenuto	Preface; Conference Committees; CONTENTS; Multiscale Singular Perturbations and Homogenization of Optimal Control Problems 0. Alvarez, M. Bardi and C. Marchi; 1. Introduction; 2. Standing assumptions; 3. Ergodicity, stabilization and the effective problem; 3.1. Ergodicity and the effective Hamiltonian; 3.2. Stabilization and the eflective initial data; 4. Regular perturbation of singular perturbation problems; 5. Singular perturbations with multiple scales; 5.1. The three scale case; 5.2. The general case; 6. Iterated homogenization for coercive equations; 7. Examples 7.1. Singular perturbation of a differential game7.2. Homogenization of a deterministic optimal control problem; 7.3. Multiscale singular perturbation under a nonresonance condition; References; Patchy Feedbacks for Stabilization and Optimal Control: General Theory and Robustness Properties F. Ancona and A. Bressan; 1. Introduction; 2. Patchy vector fields and patchy feedbacks; 3. Stabilizing feedback controls; 4. Nearly optimal patchy feedbacks; 5. Robustness; 6. Stochastic perturbations; References; Sensitivity of Control Systems with Respect to Measure- Valued Coefficients Z. Artstein

1. Introduction2. Standing hypotheses; 3. The chattering parameters model; 4. The Prohorov metric; 5 . Sensitivity for relaxed controls; 6. A matching result; 7. Sensitivity for chattering parameters; 8. Remarks and examples; References; Systems with Continuous Time and Discrete Time Components A. Bacciotti; 1. Introduction; 2. Description of the model; 3. Oscillatory systems: an example; 4. Stability notions; 5. A sufficient condition for stability; 6. Sufficient conditions for asymptotic stability; References; A Review on Stability of Switched Systems for Arbitrary Switchings U. Boscain
1. Introduction2. General properties of multilinear systems; 3. Common Lyapunov functions; 4. Two-dimensional bilinear systems; 4.1. The diagonalisable case; 4.1.1. Normal forms in the diagonalizable case; 4.1.2. Stability conditions in the diagonalizable case; 4.2. The nondiagonalizable case; 4.2.1. Normal forms in the nondiagonalizable case; 4.2.2. Stability conditions in the nondiagonalizable case; 5. An open problem; Acknowledgments; References; Regularity Properties of Attainable Sets under State Constraints P. Cannarsa, M. Castelpietra and P. Cardaliaguet; 1. Introduction
2. Maximum principle under state constraints3. Perimeter estimates for the attainable set; References; A Generalized Hopf-Lax Formula: Analytical and Approxi- mations Aspects I. Capuzzo Dolcetta; 1. Introduction; 2. A generalized eikonal equation; 3. The generalized Hopf-Lax formula; 4. The Hopf-Lax formula for the Heisenberg Hamiltonian; 4.1. A singular perturbation problem on the Heisenberg group; 4.2. Convergence rate of finite diflerences approximation; References; Regularity of Solutions to One-Dimensional and Multi-Dimensional Problems in the Calculus of Variations F.H. Clarke
1. Introduction

Sommario/riassunto

The aim of this volume is to provide a synthetic account of past research, to give an up-to-date guide to current intertwined developments of control theory and nonsmooth analysis, and also to point to future research directions.