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Nota di contenuto	1 Generalized Lax-Hopf formulas for Cournot Maps and Hamilton-Jacobi-McKendrick Equations, Jean-Pierre Aubin and Chen Luxi -- 2 A geometric approach to the optimal control of nonholonomic mechanical systems, Anthony Bloch, Leonardo Colombo, Rohit Gupta and David Martin de Diego -- 3 Lunar perturbation of the metric associated to the averaged orbital transfer, Bernard Bonnard, Helen Henninger and Jeremy Rouot -- 4 Conjugate times and regularity of the minimum time function with differential inclusions, Piermarco Cannarsa and Teresa Scarinci -- 5 Weak solutions for first order mean field games with local

coupling, Pierre Cardaliaguet -- 6 omega-limit sets for differential inclusions, Asen L. Dontchev, Mikhail I. Krastanov and Vladimir M. Veliov -- 7 Second-Order Necessary Optimality Conditions for the Mayer Problem Subject to a General Control Constraint, Helene Frankowska and Nikolai P. Osmolovskii -- 8 Optimal Control of Cancer Treatments: Mathematical Models for the Tumor Microenvironment, Heinz Schaettler and Urszula Ledzewicz.

Sommario/riassunto

Since the 1950s control theory has established itself as a major mathematical discipline, particularly suitable for application in a number of research fields, including advanced engineering design, economics and the medical sciences. However, since its emergence, there has been a need to rethink and extend fields such as calculus of variations, differential geometry and nonsmooth analysis, which are closely tied to research on applications. Today control theory is a rich source of basic abstract problems arising from applications, and provides an important frame of reference for investigating purely mathematical issues. In many fields of mathematics, the huge and growing scope of activity has been accompanied by fragmentation into a multitude of narrow specialties. However, outstanding advances are often the result of the quest for unifying themes and a synthesis of different approaches. Control theory and its applications are no exception. Here, the interaction between analysis and geometry has played a crucial role in the evolution of the field. This book collects some recent results, highlighting geometrical and analytical aspects and the possible connections between them. Applications provide the background, in the classical spirit of mutual interplay between abstract theory and problem-solving practice.