1. Record Nr. UNINA9911004775303321 Autore Kirk Donald E. Titolo Optimal Control Theory: An Introduction / Donald E. Kirk Mineola, N.Y.:,: Dover Publications,, 2004 Pubbl/distr/stampa **ISBN** 0-486-13507-1 1-62198-596-2 Edizione [1st ed.] Descrizione fisica 1 online resource (761 pages) Collana Dover Books on Electrical Engineering Disciplina 629.8312 Soggetti Mathematical optimization Control theory Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di contenuto Part I: Describing The System And Evaluating Its Performance -- Part II: Dynamic Programming -- Part III: The Calculus Of Variations And Pontryagin's Minimum Principle -- Part IV: Iterative Numerical Techniques For Finding Optimal Controls And Trajectories -- Part V: Conclusion Optimal control theory is the science of maximizing the returns from Sommario/riassunto and minimizing the costs of the operation of physical, social, and economic processes. Geared toward upper-level undergraduates, this text introduces three aspects of optimal control theory: dynamic programming, Pontryagin's minimum principle, and numerical techniques for trajectory optimization. Chapters 1 and 2 focus on describing systems and evaluating their performances. Chapter 3 deals with dynamic programming. The calculus of variations and Pontryagin's minimum principle are the subjects of chapters 4 and 5, and chapter 6 examines iterative numerical techniques for finding optimal controls and trajectories. Numerous problems, intended to introduce additional

topics as well as to illustrate basic concepts, appear throughout the

text.