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Autore	Ben-Tal A
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Nota di contenuto	Frontmatter -- Contents -- Preface -- Part I. Robust Linear Optimization -- Chapter One. Uncertain Linear Optimization Problems and their Robust Counterparts -- Chapter Two. Robust Counterpart Approximations of Scalar Chance Constraints -- Chapter Three. Globalized Robust Counterparts of Uncertain LO Problems -- Chapter Four. More on Safe Tractable Approximations of Scalar Chance Constraints -- Part II. Robust Conic Optimization -- Chapter Five. Uncertain Conic Optimization: The Concepts -- Chapter Six. Uncertain Conic Quadratic Problems with Tractable RCs -- Chapter Seven. Approximating RCs of Uncertain Conic Quadratic Problems -- Chapter Eight. Uncertain Semidefinite Problems with Tractable RCs -- Chapter Nine. Approximating RCs of Uncertain Semidefinite Problems -- Chapter Ten. Approximating Chance Constrained CQIs and LMIs -- Chapter Eleven. Globalized Robust Counterparts of Uncertain Conic Problems -- Chapter Twelve. Robust Classification and Estimation -- Part III. Robust Multi-Stage Optimization -- Chapter Thirteen. Robust Markov Decision Processes -- Chapter Fourteen. Robust Adjustable Multistage Optimization -- Part IV. Selected Applications -- Chapter Fifteen. Selected Applications -- Appendix A: Notation and

Sommario/riassunto

Robust optimization is still a relatively new approach to optimization problems affected by uncertainty, but it has already proved so useful in real applications that it is difficult to tackle such problems today without considering this powerful methodology. Written by the principal developers of robust optimization, and describing the main achievements of a decade of research, this is the first book to provide a comprehensive and up-to-date account of the subject. Robust optimization is designed to meet some major challenges associated with uncertainty-affected optimization problems: to operate under lack of full information on the nature of uncertainty; to model the problem in a form that can be solved efficiently; and to provide guarantees about the performance of the solution. The book starts with a relatively simple treatment of uncertain linear programming, proceeding with a deep analysis of the interconnections between the construction of appropriate uncertainty sets and the classical chance constraints (probabilistic) approach. It then develops the robust optimization theory for uncertain conic quadratic and semidefinite optimization problems and dynamic (multistage) problems. The theory is supported by numerous examples and computational illustrations. An essential book for anyone working on optimization and decision making under uncertainty, Robust Optimization also makes an ideal graduate textbook on the subject.

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