

| | |
|-------------------------|---|
| 1. Record Nr. | UNINA9910780200503321 |
| Autore | Rustem Berc |
| Titolo | Algorithms for worst-case design and applications to risk management [[electronic resource] /] / Berc Rustem, Melendres Howe |
| Pubbl/distr/stampa | Princeton, N.J. ; ; Oxford, : Princeton University Press, 2002 |
| ISBN | 1-68015-896-1 1-282-15719-1 9786612157196 1-4008-2511-3 1-4008-1460-X |
| Edizione | [Course Book] |
| Descrizione fisica | 1 online resource (405 p.) |
| Altri autori (Persone) | HoweMelendres |
| Disciplina | 511.8 |
| Soggetti | Risk management - Mathematical models Risk - Mathematical models Decision making - Mathematical models Algorithms |
| 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 | Front matter -- Contents -- Preface -- Chapter 1. Introduction to Minimax -- Chapter 2. A Survey Of Continuous Minimax Algorithms -- Chapter 3. Algorithms For Computing Saddle Points -- Chapter 4. A Quasi-Newton Algorithm For Continuous Minimax -- Chapter 5. Numerical Experiments With Continuous Minimax Algorithms -- Chapter 6 Minimax As A Robust Strategy For Discrete Rival Scenarios -- Chapter 7 Discrete Minimax Algorithm For Equality And Inequality Constrained Models -- Chapter 8. A Continuous Minimax Strategy For Options Hedging -- Chapter 9. Minimax and Asset Allocation Problems -- Chapter 10. Asset/Liability Management Under Uncertainty -- Chapter 11 Robust Currency Management -- Index |
| Sommario/riassunto | Recognizing that robust decision making is vital in risk management, this book provides concepts and algorithms for computing the best decision in view of the worst-case scenario. The main tool used is minimax, which ensures robust policies with guaranteed optimal performance that will improve further if the worst case is not realized. |

The applications considered are drawn from finance, but the design and algorithms presented are equally applicable to problems of economic policy, engineering design, and other areas of decision making. Critically, worst-case design addresses not only Armageddon-type uncertainty. Indeed, the determination of the worst case becomes nontrivial when faced with numerous--possibly infinite--and reasonably likely rival scenarios. Optimality does not depend on any single scenario but on all the scenarios under consideration. Worst-case optimal decisions provide guaranteed optimal performance for systems operating within the specified scenario range indicating the uncertainty. The noninferiority of minimax solutions--which also offer the possibility of multiple maxima--ensures this optimality. Worst-case design is not intended to necessarily replace expected value optimization when the underlying uncertainty is stochastic. However, wise decision making requires the justification of policies based on expected value optimization in view of the worst-case scenario. Conversely, the cost of the assured performance provided by robust worst-case decision making needs to be evaluated relative to optimal expected values. Written for postgraduate students and researchers engaged in optimization, engineering design, economics, and finance, this book will also be invaluable to practitioners in risk management.
