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| Titolo                  | Nonlinear Multiobjective Optimization [[electronic resource] ] / by Kaisa Miettinen  |
| Pubbl/distr/stampa      | New York, NY : , : Springer US : , : Imprint : Springer, , 1998  |
| ISBN                    | 1-4615-5563-9  |
| Edizione                | [1st ed. 1998.]  |
| Descrizione fisica      | 1 online resource (XXI, 298 p.)  |
| Collana                 | International Series in Operations Research & Management Science, , 0884-8289 ; ; 12   |
| Disciplina              | 658.40301  |
| Soggetti                | Operations research<br>Decision making<br>Mathematical optimization<br>Calculus of variations<br>Operations Research/Decision Theory<br>Optimization<br>Calculus of Variations and Optimal Control; Optimization   |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Note generali           | Bibliographic Level Mode of Issuance: Monograph  |
| Nota di bibliografia    | Includes bibliographical references and index.   |
| Nota di contenuto       | I Terminology And Theory -- 2. Concepts -- 3. Theoretical Background -- II Methods -- 2. No-Preference Methods -- 3. A Posteriori Methods -- 4. A Priori Methods -- 5. Interactive Methods -- III Related Issues -- 1. Comparing Methods -- 2. Software -- 3. Graphical Illustration -- 4. Future Directions -- 5. Epilogue -- References.   |
| Sommario/riassunto      | Problems with multiple objectives and criteria are generally known as multiple criteria optimization or multiple criteria decision-making (MCDM) problems. So far, these types of problems have typically been modelled and solved by means of linear programming. However, many real-life phenomena are of a nonlinear nature, which is why we need tools for nonlinear programming capable of handling several conflicting or incommensurable objectives. In this case, methods of traditional single objective optimization and linear programming are not enough; we need new ways of thinking, new concepts, and new methods - nonlinear multiobjective optimization. Nonlinear Multiobjective Optimization provides an extensive, up-to-date, self-contained and |

consistent survey, review of the literature and of the state of the art on nonlinear (deterministic) multiobjective optimization, its methods, its theory and its background. The amount of literature on multiobjective optimization is immense. The treatment in this book is based on approximately 1500 publications in English printed mainly after the year 1980. Problems related to real-life applications often contain irregularities and nonsmoothnesses. The treatment of nondifferentiable multiobjective optimization in the literature is rather rare. For this reason, this book contains material about the possibilities, background, theory and methods of nondifferentiable multiobjective optimization as well. This book is intended for both researchers and students in the areas of (applied) mathematics, engineering, economics, operations research and management science; it is meant for both professionals and practitioners in many different fields of application. The intention has been to provide a consistent summary that may help in selecting an appropriate method for the problem to be solved. It is hoped the extensive bibliography will be of value to researchers.

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