

1. Record Nr.	UNINA9910809090503321
Autore	Kolbin V. V (Viacheslav Viktorovich), <1941->
Titolo	Decision making and programming // V.V. Kolbin ; translated from Russian by V.M. Donets
Pubbl/distr/stampa	River Edge, N.J., : World Scientific, c2003
ISBN	1-281-92816-X 9786611928162 981-277-546-3
Edizione	[1st ed.]
Descrizione fisica	1 online resource (757 p.)
Disciplina	519.7
Soggetti	Decision making - Mathematical models Computer programming - Decision making
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 (p. 733-745).
Nota di contenuto	CONTENTS; INTRODUCTION; Chapter 1 SOCIAL CHOICE PROBLEMS; 1.1. INDIVIDUAL PREFERENCE AGGREGATION; 1.1.1. Individual Preference Aggregation under Certainty; 1.1.2. Individual Preference Aggregation under Uncertainty; 1.1.3. Decision-making under Fuzzy Preference Relation on the Set of Alternatives; 1.2. COLLECTIVE PREFERENCE AGGREGATION; 1.2.1. The Procedures Using the Scale as the Auxiliary Collective Structure; 1.2.2. The Procedures Taking into Account Individual Utility Alternatives; 1.2.3. The Procedures with Exclusion of a Part of Alternatives 1.2.4. The Procedure with the Aggregating Rule Altered 1.2.5. Collective Preference Aggregation; 1.3. MANIPULATION; 1.3.1. Dictation policy; 1.3.2. Methods of group manipulation; 1.3.3. Manipulation theorems and proofs; 1.4. EXAMPLES AND ALGORITHMS FOR PREFERENCE AGGREGATION; 1.4.1. Examples and Algorithm for Preference Aggregation Subject to Criterion Convolution; 1.4.2. Examples and Algorithm for Preference Aggregation in Terms of a Set of Attributes; 1.4.3. The Examples Using the Aggregating Rules during Collective Decision Making (Voting Rules); Chapter 2 VECTOR OPTIMIZATION 2.1. DEFINITION OF UNIMPROVABLE POINTS 2.2. OPTIMIZATION OF THE HIERARCHICAL SEQUENCE OF QUALITY CRITERIA; 2.3. TRADEOFFS; I. Uniformity principles; II. Fair concession principles; III. Other optimality

principles; 2.4. THE LINEAR CONVOLUTION OF CRITERIA IN MULTICRITERIA OPTIMIZATION PROBLEMS; 2.4.1. The linear convolution of criteria in multicriteria optimization problems; 2.4.2. Properties of linear convolution; 2.4.3. A geometric interpretation of linear convolution; 2.4.4. Bicriterial problems; 2.5. SOLVABILITY OF THE VECTOR PROBLEM BY THE LINEAR CRITERIA CONVOLUTION ALGORITHM 2.5.1. Test for solvability 2.5.2. Solvability of trajectory problems; 2.5.3. The reduction algorithm for the solvable problem; 2.6. THE LOGICAL CRITERION VECTOR CONVOLUTION IN THE PARETO SET APPROXIMATION PROBLEM; 2.6.1. The regular case; 2.6.2. The convex case; 2.6.3. The linear case; 2.7. COMPUTATIONAL RESEARCH ON LINEAR CRITERIA CONVOLUTION IN MULTICRITERIA DISCRETE PROGRAMMING; 2.7.1 Computational complexity of multicriteria discrete optimization problems; 2.7.2. A computational experiment; 2.7.3. A problem-solving algorithm; 2.7.4. The results of computational experiment  
Chapter 3 INFINITE-VALUED PROGRAMMING PROBLEMS 3.1. BASIC NOTIONS AND PROPOSITIONS; 3.2. JUSTIFICATION OF NUMERICAL METHODS FOR SOLVING INFINITE-VALUED PROGRAMMING PROBLEMS; 3.3. NUMERICAL METHODS OF SOLUTION; 3.4. SEPARABLE INFINITE-VALUED PROGRAMMING PROBLEMS; 3.4.1. Existence conditions for solutions in separable infinite-valued problems; 3.4.2. Some methods for solving separable infinite-dimensional problems; Chapter 4 STOCHASTIC PROGRAMMING; 4.1. STOCHASTIC PROGRAMMING MODELS; 4.2. STOCHASTIC PROGRAMMING METHODS; 4.3. SOLUTION ALGORITHMS FOR STOCHASTIC PROGRAMMING PROBLEMS 4.3.1. Solution of a two-stage linear stochastic programming problem

---

Sommario/riassunto

The problem of selection of alternatives or the problem of decision making in the modern world has become the most important class of problems constantly faced by business people, researchers, doctors and engineers. The fields that are almost entirely focused on conflicts, where applied mathematics is successfully used, are law, military science, many branches of economics, sociology, political science, and psychology. There are good grounds to believe that medicine and some branches of biology and ethics can also be included in this list. Modern applied mathematics can produce solutions to

---