Lecture Notes in Economics and Mathematical Systems

Managing Editors: M. Beckmann and H. P. Künzi Operations Resarch

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Integer Programming and Related Areas

A Classified Bibliography 1978–1981

Edited by R. von Randow



Springer-Verlag Berlin Heidelberg New York

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A Classified Bibliography 1978–1981

Compiled at the Institut für Ökonometrie und Operations Research, University of Bonn

Edited by R. von Randow



Springer-Verlag Berlin Heidelberg New York 1982

.Integer programming

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AMS Subject Classifications (1980): 05, 05 A, 05 B, 05 C, 68, 68 A, 68 C 68 E, 90, 90 B, 90 C

ISBN 3-540-11203-0 Springer-Verlag Berlin Heidelberg New York ISBN 0-387-11203-0 Springer-Verlag New York Heidelberg Berlin

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Printing and binding: Beltz Offsetdruck, Hemsbach/Bergstr. 2142/3140-543210

PREFACE

The field of integer programming continues to be one of the most vital areas of mathematical optimization, and the flood of publications tends to become even more difficult to survey than in the past. A classified bibliography of the literature thus seems even more necessary today than it did when I started such a project in 1970 for collecting and classifying all available publications on integer programming. This pioneering work was performed by Claus Kastning during the years 1970 - 1975 in the Institut für Ökonometrie und Operations Research, Bonn, and culminated in the publication of the first volume of the classified bibliography entitled "Integer Programming and Related Areas", Lecture Notes in Economics and Mathematical Systems, Volume 128.

Work on the project was continued by Dirk Hausmann and Reinhardt Euler, and three years later the second volume was published as Lecture Notes in Economics and Mathematical Systems, Volume 160.

The present book constitutes the third volume of the bibliography and covers the period from early in 1978 to mid 1981. It contains 3924 new publications by 3075 authors and its compilation was begun by Reinhardt Euler and continued by Rabe von Randow. Its form is practically identical to that of the first two volumes, some slight changes having been made in the subject list.

Finally I would again like to thank the programmers of the Institute for their extensive programming effort.

Bonn, November 1981

Bernhard Korte

INTRODUCTORY REMARKS

This volume continues the series "Integer Programming and Related Areas: A Classified Bibliography", published as Lecture Notes in Economics and Mathematical Systems Nos. 128 and 160. It contains the publications appearing in the period from early in 1978 to mid 1981, as well as any previous publications which were not included in the first or second volume.

The following topics are covered:

- theory and methods of general integer programming;
- combinatorial and graph theoretical optimization problems related to integer programming;
- applications of integer programming .

A detailed list of the subjects included is given at the end of this introduction. Textbooks and proceedings volumes have been included only if they deal principally with integer programming.

PART 1: This part comprises the alphabetical bibliography which lists all publications alphabetically by the first author and chronologically for each author, and includes the full bibliographical data plus a reference code which reflects the author's name and the year of publication. The purpose of the code is to enable the user to identify publications referenced in Part 2 and Part 3.

Bibliographical data are given as follows:

a) Textbook:

ref. code

author(s)

title. Where published: publisher(s), no. of pages. (Year).

b) Article in a journal:

ref. code author(s) title. Journal, vol. no., pages. (Year).

c) Article in a proceedings volume :

ref. code author(s)

title. IN: Editor(s): title of the proceedings volume, pages. Where published: publisher(s). (Year).

d) Paper:

ref. code author(s)

title. Classification of the paper. Where published: publisher, no. of pages. (Year).

Publications in English, French or German appear under their original title. Titles of publications written in other languages have been translated into English and the original language indicated in brackets.

PART 2: In this part the publications have been classified according to 51 subjects; within each subject the ordering is again alphabetical by the first author.

The subject list following these remarks contains 51 main subject headings, and for 87 further topics the corresponding subject headings have been indicated. The publications appear under all relevant headings; the references are restricted to name(s) of author(s), title and reference code, with which the full bibliographical data can be retrieved from Part 1.

PART 3: The purpose of this part is to enable the user to locate publications for which only a coauthor's name is known. It consists of an alphabetical catalogue of all the authors appearing in Part 1, and lists for each author the reference codes of all his publications.

SUBJECT LIST

acyclic subgraph problem → graph theoretic results

ADJACENCY ON INTEGER POLYHEDRA

aggregation → diophantine systems and aggregation

air crew scheduling → covering; scheduling

ALGEBRAIC METHODS AND ALGEBRAIZATION OF PROBLEMS

algorithm codes → computer codes

allocation → location and allocation

antiblocking → blocking, antiblocking, integer rounding

APPLICATIONS OF INTEGER PROGRAMMING

approximate algorithms → heuristics

assembly line balancing → scheduling

ASSIGNMENT

backtracking methods → branch and bound

balanced matrices → unimodular, balanced, and perfect matrices

Benders' method → decomposition; mixed integer programming

bibliographies → surveys, bibliographies

bin packing → packing

bivalent programming → zero-one programming

BLOCKING, ANTIBLOCKING, INTEGER ROUNDING

BOOLEAN METHODS

BOTTLENECK PROBLEMS

BRANCH AND BOUND

branchings → graph theoretic results

chance constrained methods → stochastic integer programming

Chinese postman

routing

clustering

→ partitioning; combinatorial optimization problems

COLORING PROBLEMS

COMBINATORIAL OPTIMIZATION PROBLEMS (UNLESS SPECIFIED ELSEWHERE)

COMPLEXITY

COMPUTATIONAL RESULTS

COMPUTER CODES

convex integer programming

nonlinear integer programming

corner polyhedra

→ group theoretic approach; integer

polyhedra

COVERING

CPM

→ network flows

crew scheduling

→ covering; scheduling

CUTTING PLANES

cutting stock

combinatorial optimization problems

DECOMPOSITION

DIOPHANTINE SYSTEMS AND AGGREGATION

DISJUNCTIVE PROGRAMMING

DUALITY IN INTEGER PROGRAMMING

DYNAMIC PROGRAMMING

edge covering

→ covering

enumeration methods

→ branch and bound

FACETS OF INTEGER POLYHEDRA

FIXED CHARGE

flow shop scheduling

→ scheduling

flows in networks

network flows

fractional integer programming →

nonlinear integer programming

network flows generalized networks nonlinear integer programming goal programming **→** GRAPH THEORETIC RESULTS (UNLESS SPECIFIED ELSEWHERE) greedy algorithms matroids and independence systems; heuristics GROUP THEORETIC APPROACH graph theoretic results; travelling Hamiltonian cycle salesman Hermite normal form diophantine systems and aggregation; group theoretic approach HEURISTICS, APPROXIMATE ALGORITHMS transportation Hitchcock Koopmans problem Hungarian method \rightarrow assignment branch and bound implicit enumeration \rightarrow independence systems matroids and independence systems integer linear programming group theoretic approach over cones (ILPC) INTEGER POLYHEDRA (UNLESS SPECIFIED ELSEWHERE) INTEGER PROGRAMMING (GENERAL) blocking, antiblocking, integer rounding integer rounding \rightarrow job shop scheduling \rightarrow scheduling KNAPSACK relaxations Lagrangean relaxation decomposition large scale programming layout problems location and allocation; combinatorial optimization problems

scheduling

shortest paths

line balancing

longest paths

LOCATION AND ALLOCATION

	lot sizing	→	scheduling					
	machine scheduling	\rightarrow	scheduling					
	marriage problem	\rightarrow	assignment					
	MATCHING							
MATROIDS AND INDEPENDENCE SYSTEMS								
	maximal flow problem	\rightarrow	network flows					
	minimal cut problem	\rightarrow	network flows					
	MIXED INTEGER PROGRAMMING							
	modulo optimization problems	\rightarrow	group theoretic approach					
	MPM	\rightarrow	network flows					
	MULTICOMMODITY FLOW PROBLEMS							
	multiple objectives	\rightarrow	nonlinear integer programming					
	multiterminal network flows	→	network flows					
	network design	→	combinatorial optimization problems					
	NETWORK FLOWS							
	node covering	\rightarrow	covering					
	node packing	\rightarrow	packing					
	NONLINEAR INTEGER PROGRAMMING							
	orderings	→	combinatorial optimization problems					
	PACKING							
	PARAMETRIC INTEGER PROGRAMMING							
	PARTITIONING							
	penalty methods	→	branch and bound					
	percolation	→	network flows ; stochastic integer programming					
	perfect graphs	→	unimodular, balanced, and perfect matrices					

perfect matrices	→	unimodular, balanced, and perfect matrices				
PERT	\rightarrow	network flows				
plant layout	→	location and allocation ; combinatorial optimization problems				
p-median problem	\rightarrow	location and allocation				
political districting	\rightarrow	partitioning				
probabilistic algorithms	\rightarrow	stochastic integer programming				
production planning	\rightarrow	applications of integer programming				
programming and storing techniques	\rightarrow	computer codes				
quadratic integer programming	→	nonlinear integer programming				
reduction of inequalities	\rightarrow	diophantine systems and aggregation				
reduction of integer matrices	\rightarrow	diophantine systems and aggregation				
RELAXATIONS						
ROUTING (NON-TSP)						
SCHEDULING						
sensitivity analysis	→	parametric integer programming				
separable integer programming	\rightarrow	nonlinear integer programming				
sequencing	\rightarrow	scheduling				
SHORTEST PATHS						
Smith normal form	→	diophantine systems and aggregation ; group theoretic approach				
sorting	\rightarrow	partitioning				
SPANNING TREES						
stable sets	→	graph theoretic results				
Steiner trees	→	spanning trees				
STOCHASTIC INTEGER PROGRAMMING, PROBABILISTIC ALGORITHMS						

subgradient optimization → relaxations

submodular functions → matroids and independence systems

SURVEYS, BIBLIOGRAPHIES

TEXTBOOKS

TIME-TABLING

totally unimodular matrices \rightarrow unimodular, balanced, and perfect

matrices

traffic assignment → applications of integer programming

TRANSPORTATION

transshipment → transportation

TRAVELLING SALESMAN

UNIMODULAR, BALANCED, AND PERFECT MATRICES

vector optimization → nonlinear integer programming

vertex covering → covering

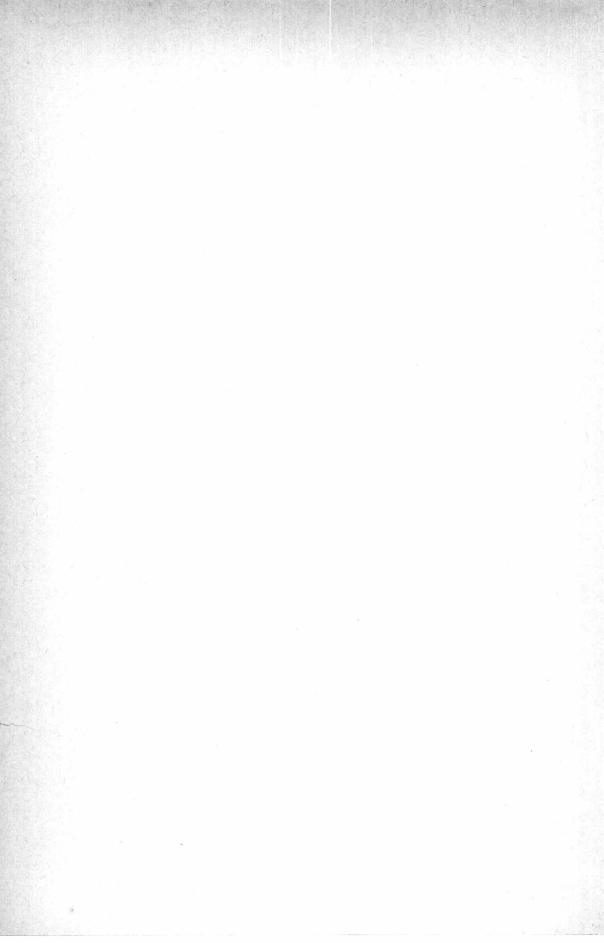
vertex packing → packing

ZERO-ONE PROGRAMMING (GENERAL)

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