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Elementary Linear Programming with Applications Elsevier *Elementary Linear Programming with Applications presents a survey of the basic ideas in linear programming and related areas. It also provides students with some of the tools used in solving difficult problems which will prove useful in their professional career. The text is comprised of six chapters. The Prologue gives a brief survey of operations research and discusses the different steps in solving an operations research problem. Chapter 0 gives a quick review of the necessary linear algebra. Chapter 1 deals with the basic necessary geometric ideas in Rn. Chapter 2 introduces linear programming with examples of the problems to be considered, and presents the simplex method as an algorithm for solving linear programming problems. Chapter 3 covers further topics in linear programming, including duality theory and sensitivity analysis. Chapter 4 presents an introduction to integer programming. Chapter 5 covers a few of the more important topics in network flows. Students of business, engineering, computer science, and mathematics will find the book very useful.* **Solutions Manual to Accompany Elementary Linear Programming with Applications Solutions Manual to accompany Elementary Linear Programming with Applications Elsevier** *Solutions Manual to accompany Elementary Linear Programming with Applications* **Linear Optimization and Extensions Problems and Solutions Springer Science & Business Media** *This book offers a comprehensive treatment of the exercises and case studies as well as summaries of the chapters of the book "Linear Optimization and Extensions" by Manfred Padberg. It covers the areas of linear programming and the optimization of linear functions over polyhedra in finite dimensional Euclidean vector spaces. Here are the main topics treated in the book: Simplex algorithms and their derivatives including the duality theory of linear programming. Polyhedral theory, pointwise and linear descriptions of polyhedra, double description algorithms, Gaussian elimination*

with and without division, the complexity of simplex steps. Projective algorithms, the geometry of projective algorithms, Newtonian barrier methods. Ellipsoids algorithms in perfect and in finite precision arithmetic, the equivalence of linear optimization and polyhedral separation. The foundations of mixed-integer programming and combinatorial optimization. **An Introduction to Linear Programming and Game Theory John Wiley & Sons** *Praise for the Second Edition: "This is quite a well-done book: very tightly organized,better-than-average exposition, and numerous examples,illustrations, and applications." —Mathematical Reviews of the American MathematicalSociety An Introduction to Linear Programming and Game Theory, ThirdEdition presents a rigorous, yet accessible, introduction tothe theoretical concepts and computational techniques of linearprogramming and game theory. Now with more extensive modelingexercises and detailed integer programming examples, this bookuniquely illustrates how mathematics can be used in real-worldapplications in the social, life, and managerial sciences,providing readers with the opportunity to develop and apply theiranalytical abilities when solving realistic problems. This Third Edition addresses various new topics and improvementsin the field of mathematical programming, and it also presents twosoftware programs, LP Assistant and the Solver add-in for MicrosoftOffice Excel, for solving linear programming problems. LPAssistant, developed by coauthor Gerard Keough, allows readers toperform the basic steps of the algorithms provided in the book andis freely available via the book's related Web site. The use of thesensitivity analysis report and integer programming algorithm fromthe Solver add-in for Microsoft Office Excel is introduced soreaders can solve the book's linear and integer programmingproblems. A detailed appendix contains instructions for the use ofboth applications. Additional features of the Third Edition include: A discussion of sensitivity analysis for the two-variableproblem, along with new examples demonstrating integer programming,non-linear programming, and make vs. buy models Revised proofs and a discussion on the relevance and solution ofthe dual problem A section on developing an example in Data EnvelopmentAnalysis An outline of the proof of John Nash's theorem on the existenceof equilibrium strategy pairs for non-cooperative, non-zero-sumgames Providing a complete mathematical development of all presentedconcepts and examples, Introduction to Linear Programming andGame Theory, Third Edition is an ideal text for linearprogramming and mathematical modeling courses at theupper-undergraduate and graduate levels. It also serves as avaluable reference for professionals who use game theory inbusiness, economics, and management science.* **The Elementary Theory of Linear Programming and Its Application to the Integral Solution of an Industrial Problem Understanding and Using Linear Programming Springer Science & Business Media** *The book is an introductory textbook mainly for students of computer science and mathematics. Our guiding phrase is "what every theoretical computer scientist should know about linear programming". A major focus is on applications of linear programming, both in practice and in theory. The book is concise, but at the same time, the main results are covered with complete proofs and in sufficient detail, ready for presentation in class. The book does not require more prerequisites than basic linear algebra, which is summarized in an appendix. One of its main goals is to help the reader to see linear programming*

"*behind the scenes*". **Mathematics with Applications for the Management, Life, and Social Sciences Academic Press** *Mathematics with Applications for the Management, Life, and Social Sciences, Second Edition presents the fundamentals of finite mathematics in a style tailored for beginners, but at the same time covers the subject matter in sufficient depth so that the student can see a rich variety of realistic and relevant applications in management, life sciences, and social sciences. Some applications of probability, game theory, and Markov chains are given. Comprised of 16 chapters, this book begins with an introduction to set theory, followed by a discussion on Cartesian coordinate systems and graphs. Subsequent chapters focus on linear programming from a geometric point of view; matrices, the solution of linear systems, and applications; the simplex method for solving linear programming problems; and permutations, combinations, and counting methods. Probability for finite sample spaces and basic concepts in statistics are also considered, along with the mathematics of finance and applications of calculus. This monograph is intended for students and instructors of applied mathematics.* **Applications supplement to elementary linear algebra Saunders College Publishing Nonlinear and Mixed-Integer Optimization Fundamentals and Applications Oxford University Press on Demand** *Filling a void in chemical engineering and optimization literature, this book presents the theory and methods for nonlinear and mixed-integer optimization, and their applications in the important area of process synthesis. Other topics include modeling issues in process synthesis, and optimization-based approaches in the synthesis of heat recovery systems, distillation-based systems, and reactor-based systems. The basics of convex analysis and nonlinear optimization are also covered and the elementary concepts of mixed-integer linear optimization are introduced. All chapters have several illustrations and geometrical interpretations of the material as well as suggested problems. Nonlinear and Mixed-Integer Optimization will prove to be an invaluable source--either as a textbook or a reference--for researchers and graduate students interested in continuous and discrete nonlinear optimization issues in engineering design, process synthesis, process operations, applied mathematics, operations research, industrial management, and systems engineering.* **Applied Artificial Intelligence Proceedings of the 7th International FLINS Conference, Genova, Italy, 29-31 August 2006 World Scientific** *FLINS, originally an acronym for Fuzzy Logic and Intelligent Technologies in Nuclear Science, is now extended to Applied Artificial Intelligence for Applied Research. The contributions to the seventh in the series of FLINS conferences contained in this volume cover state-of-the-art research and development in applied artificial intelligence for applied research in general and for power/nuclear engineering in particular.* **Applications for Elementary Linear Algebra Qualitative topics in integer linear programming American Mathematical Soc.** *Integer solutions for systems of linear inequalities, equations, and congruences are considered along with the construction and theoretical analysis of integer programming algorithms. The complexity of algorithms is analyzed dependent upon two parameters: the dimension, and the maximal modulus of the coefficients describing the conditions of the problem. The analysis is based on a thorough treatment of the qualitative and quantitative aspects of integer programming, in particular on bounds obtained by the author for the number of*

extreme points. This permits progress in many cases in which the traditional approach--which regards complexity as a function only of the length of the input--leads to a negative result. **Linear Programming Foundations and Extensions Springer Science & Business Media** *This Fourth Edition introduces the latest theory and applications in optimization. It emphasizes constrained optimization, beginning with a substantial treatment of linear programming and then proceeding to convex analysis, network flows, integer programming, quadratic programming, and convex optimization. Readers will discover a host of practical business applications as well as non-business applications. Topics are clearly developed with many numerical examples worked out in detail. Specific examples and concrete algorithms precede more abstract topics. With its focus on solving practical problems, the book features free C programs to implement the major algorithms covered, including the two-phase simplex method, primal-dual simplex method, path-following interior-point method, and homogeneous self-dual methods. In addition, the author provides online JAVA applets that illustrate various pivot rules and variants of the simplex method, both for linear programming and for network flows. These C programs and JAVA tools can be found on the book's website. The website also includes new online instructional tools and exercises.* **Mathematical Programming An Introduction to Optimization Routledge** *First Published in 2018. Routledge is an imprint of Taylor & Francis, an Informa company.* **An Introduction to Optimization John Wiley & Sons** *Praise from the Second Edition "...an excellent introduction to optimization theory..." (Journal of Mathematical Psychology, 2002) "A textbook for a one-semester course on optimization theory and methods at the senior undergraduate or beginning graduate level." (SciTech Book News, Vol. 26, No. 2, June 2002) Explore the latest applications of optimization theory and methods Optimization is central to any problem involving decision making in many disciplines, such as engineering, mathematics, statistics, economics, and computer science. Now, more than ever, it is increasingly vital to have a firm grasp of the topic due to the rapid progress in computer technology, including the development and availability of user-friendly software, high-speed and parallel processors, and networks. Fully updated to reflect modern developments in the field, An Introduction to Optimization, Third Edition fills the need for an accessible, yet rigorous, introduction to optimization theory and methods. The book begins with a review of basic definitions and notations and also provides the related fundamental background of linear algebra, geometry, and calculus. With this foundation, the authors explore the essential topics of unconstrained optimization problems, linear programming problems, and nonlinear constrained optimization. An optimization perspective on global search methods is featured and includes discussions on genetic algorithms, particle swarm optimization, and the simulated annealing algorithm. In addition, the book includes an elementary introduction to artificial neural networks, convex optimization, and multi-objective optimization, all of which are of tremendous interest to students, researchers, and practitioners. Additional features of the Third Edition include: New discussions of semidefinite programming and Lagrangian algorithms A new chapter on global search methods A new chapter on multipleobjective optimization New and modified examples and exercises in each chapter as well as an updated bibliography containing new references An updated*

Instructor's Manual with fully worked-out solutions to the exercises Numerous diagrams and figures found throughout the text complement the written presentation of key concepts, and each chapter is followed by MATLAB exercises and drill problems that reinforce the discussed theory and algorithms. With innovative coverage and a straightforward approach, An Introduction to Optimization, Third Edition is an excellent book for courses in optimization theory and methods at the upper-undergraduate and graduate levels. It also serves as a useful, self-contained reference for researchers and professionals in a wide array of fields. **Elementary Linear Algebra, with Applications PWS Publishing Company Linear Programming Macmillan** *"This comprehensive treatment of the fundamental ideas and principles of linear programming covers basic theory, selected applications, network flow problems, and advanced techniques. Using specific examples to illuminate practical and theoretical aspects of the subject, the author clearly reveals the structures of fully detailed proofs. The presentation is geared toward modern efficient implementations of the simplex method and appropriate data structures for network flow problems. Completely self-contained, it develops even elementary facts on linear equations and matrices from the beginning."--Back cover.* **Linear Programming An Introduction with Applications Elsevier** *Includes one IBM/PC floppy disk. System Requirements: Monochrome monitors, IBM-compatible machines, minimum: 286 IBM, DOS 2.0 or higher. This book gives a complete, concise introduction to the theory and applications of linear programming. It emphasizes the practical applications of mathematics, and makes the subject more accessible to individuals with varying mathematical abilities. It is one of the first rigorous linear programming texts that does not require linear algebra as a prerequisite. In addition, this text contains a floppy disk containing the program SIMPLEX, designed to help students solve problems using the computer. Key Features * Less rigorous mathematically - will appeal to individuals with varying mathematical abilities * Includes a floppy disk containing the program SIMPLEX and an appendix to help students solve problems using the computer * Includes chapters on network analysis and dynamic programming - topics of great interest to business majors and industrial engineers * Includes modem applications - selected computer programs for solving various max/min applications* **Invitation to Linear Programming and Game Theory Cambridge University Press** *Discover interplay between matrices, linear programming, and game theory at an introductory level, requiring only high school algebra and curiosity.* **Convex Optimization Cambridge University Press** *A comprehensive introduction to the tools, techniques and applications of convex optimization.* **Elementary Linear Programming Matrices and Linear Programming with Applications A Computer-Assisted Analysis System for Mathematical Programming Models and Solutions A User's Guide for ANALYZE© Springer Science & Business Media** *Welcome to ANALYZE, designed to provide computer assistance for analyzing linear programs and their solutions. Chapter 1 gives an overview of ANALYZE and how to install it. It also describes how to get started and how to obtain further documentation and help on-line. Chapter 2 reviews the forms of linear programming models and describes the syntax of a model. One of the routine, but important, functions of ANALYZE is to enable convenient access to rows and columns in the matrix by conditional delineation.*

Chapter 3 illustrates simple queries, like DISPLAY, LIST, and PICTURE. This chapter also introduces the SUBMAT command level to define any submatrix by an arbitrary sequence of additions, deletions and reversals. Syntactic explanations and a schema view are also illustrated. Chapter 4 goes through some elementary exercises to demonstrate computer assisted analysis and introduce additional conventions of the ANALYZE language. Besides simple queries, it demonstrates the INTERPRT command, which automates the analysis process and gives English explanations of results. The last 2 exercises are diagnoses of elementary infeasible instances of a particular model. Chapter 5 progresses to some advanced uses of ANALYZE. The first is blocking to obtain macro views of the model and for finding embedded substructures, like a netform. The second is showing rates of substitution described by the basic equations. Then, the use of the REDUCE and BASIS commands are illustrated for a variety of applications, including solution analysis, infeasibility diagnosis, and redundancy detection. **Elementary Linear Algebra Applications Version John Wiley & Sons** *Elementary Linear Algebra 10th edition gives an elementary treatment of linear algebra that is suitable for a first course for undergraduate students. The aim is to present the fundamentals of linear algebra in the clearest possible way; pedagogy is the main consideration. Calculus is not a prerequisite, but there are clearly labeled exercises and examples (which can be omitted without loss of continuity) for students who have studied calculus. Technology also is not required, but for those who would like to use MATLAB, Maple, or Mathematica, or calculators with linear algebra capabilities, exercises are included at the ends of chapters that allow for further exploration using those tools.* **Applied Integer Programming Modeling and Solution John Wiley & Sons** *An accessible treatment of the modeling and solution of integer programming problems, featuring modern applications and software In order to fully comprehend the algorithms associated with integer programming, it is important to understand not only how algorithms work, but also why they work. Applied Integer Programming features a unique emphasis on this point, focusing on problem modeling and solution using commercial software. Taking an application-oriented approach, this book addresses the art and science of mathematical modeling related to the mixed integer programming (MIP) framework and discusses the algorithms and associated practices that enable those models to be solved most efficiently. The book begins with coverage of successful applications, systematic modeling procedures, typical model types, transformation of non-MIP models, combinatorial optimization problem models, and automatic preprocessing to obtain a better formulation. Subsequent chapters present algebraic and geometric basic concepts of linear programming theory and network flows needed for understanding integer programming. Finally, the book concludes with classical and modern solution approaches as well as the key components for building an integrated software system capable of solving large-scale integer programming and combinatorial optimization problems. Throughout the book, the authors demonstrate essential concepts through numerous examples and figures. Each new concept or algorithm is accompanied by a numerical example, and, where applicable, graphics are used to draw together diverse problems or approaches into a unified whole. In addition, features of solution approaches found in today's commercial software are identified throughout the book. Thoroughly*

classroom-tested, Applied Integer Programming is an excellent book for integer programming courses at the upper-undergraduate and graduate levels. It also serves as a well-organized reference for professionals, software developers, and analysts who work in the fields of applied mathematics, computer science, operations research, management science, and engineering and use integer-programming techniques to model and solve real-world optimization problems. **Study Guide for Applied Finite Mathematics Elsevier** *Study Guide for Applied Finite Mathematics, Third Edition is a study guide that introduces beginners to the fundamentals of finite mathematics and its various realistic and relevant applications. Some applications of probability, game theory, and Markov chains are given. Each chapter includes exercises, and each set begins with basic computational "drill" problems and then progresses to problems with more substance. Comprised of 10 chapters, this book begins with exercises related to set theory and concepts such as the union and intersection of sets. Exercises on Cartesian coordinate systems and graphs as well as linear programming from a geometric and algebraic point of view are then given. Subsequent chapters deal with matrices, the solution of linear systems, and applications; the simplex method for solving linear programming problems; and probability and probability models for finite sample spaces as well as permutations, combinations, and counting methods. Basic concepts in statistics are also considered, along with the mathematics of finance. Some applications of probability, game theory, and Markov chains are also considered. This monograph is intended for students and instructors of applied mathematics.* **Linear Programming in Industry Theory and Applications. An Introduction Springer Science & Business Media** *The present volume is intended to serve a twofold purpose. First, it provides a university text of Linear Programming for students of economics or operations research interested in the theory of production and cost and its practical applications; secondly, it is the author's hope that engineers, business executives, managers, and others responsible for the organization and planning of industrial operations may find the book useful as an introduction to Linear Programming methods and techniques. Despite the different backgrounds of these categories of potential readerR, their respective fields overlap to a considerable extent; both are concerned with economic optimization problems, and the use of Linear Programming to problems of production planning is simply applied theory of production. The non-economist reader may, but should not, pass over Chapter IV in which the linear production model is linked up with the economic theory of production. Without being an advanced text, the book aims at covering enough ground to make the reader capable of detecting, formulating, and solving such linear planning problems as he may encounter within his particular field. No heavy demands are made on the reader's mathematical profi ciency; except for the proofs in the Appendix-which may be skipped if desired-the mathematical exposition is purely elementary, involving only simple linear relations. In the author's experience, the pedagogical advantages of thi;:; approach, as compared with the use of matrix algebra, amply justify the sacrifice of mathematical elegance and typographical simplicity, particularly in explaining the simplex method.* **Linear Programming Elementary Geographical Applications of the Transportation Problem Scientific and Technical Aerospace Reports** *Lists citations with abstracts for aerospace related reports*

obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database. **Linear Programming Methods and Applications New Age International** *Due To The Availability Of Computer Packages, The Use Of Linear Programming Technique By The Managers Has Become Universal. This Text Has Been Written Primarily For Management Students And Executives Who Have No Previous Background Of Linear Programming. The Text Is Oriented Towards Introducing Important Ideas In Linear Programming Technique At A Fundamental Level And Help The Students In Understanding Its Applications To A Wide Variety Of Managerial Problems. In Order To Strengthen The Understanding, Each Concept Has Been Illustrated With Examples. The Book Has Been Written In A Simple And Lucid Language And Has Avoided Mathematical Derivations So As To Make It Accessible To Every One.The Text Can Be Used In Its Entirely In A Fifteen Session Course At Programmes In Management, Commerce, Economics, Engineering Or Accountancy. The Text Can Be Used In One/Two Week Management/Executive Development Programmes To Be Supplemented With Some Cases. Practicing Managers And Executives, Computer Professionals, Industrial Engineers, Chartered And Cost Accountants And Economic Planners Would Also Find This Text Useful.* **Modeling Mineral and Energy Markets Springer Science & Business Media** *This book provides a framework for analyzing and forecasting a variety of mineral and energy markets and related industries. Such modeling activity has been at the forefront of the economic and engineering professions for some time, having received a major stimulus fC?llowing the first oil price shock in 1973. Since that time, other shocks have affected these markets and industries, causing disequilibrium economic adjustments which are difficult to analyze and to predict. Moreover, geopolitics remains an important factor which can destabilize crude oil markets and associated refining industries. Mineral and energy modeling, consequently, has become a major interest of energy-related corporations, mining and drilling companies, metal manufacturers, public utilities, investment banks,. national government agencies and international organizations. This book hopes to advance mineral and energy modeling as follows: (1) The modeling process is presented sequentially by leading the model builder from model specification, estimation, simulation, and validation to practical model applications, including explaining history, analyzing policy, and market and price forecasting; (2) New developments in modeling approaches are presented which encompass econometric market and industry models, spatial equilibrium and programming models, optimal resource depletion models, input-output models, economic sector models, and macro oriented energy interaction models (including computable general equilibrium); (3) The verification and application of the models is considered not only individually but also in relation to the performance of alternative modeling approaches; and (4) The modeling framework includes a perspective on new directions, so that the present model building advice will extend into the future.* **Elementary Linear Algebra Academic Press** *Elementary Linear Algebra reviews the elementary foundations of linear algebra in a student-oriented, highly readable way. The many examples and large number and variety of exercises in each section help the student learn and understand the material. The instructor is also given flexibility by allowing the presentation of a traditional introductory linear algebra*

course with varying emphasis on applications or numerical considerations. In addition, the instructor can tailor coverage of several topics. Comprised of six chapters, this book first discusses Gaussian elimination and the algebra of matrices. Applications are interspersed throughout, and the problem of solving AX = B, where A is square and invertible, is tackled. The reader is then introduced to vector spaces and subspaces, linear independences, and dimension, along with rank, determinants, and the concept of inner product spaces. The final chapter deals with various topics that highlight the interaction between linear algebra and all the other branches of mathematics, including function theory, analysis, and the singular value decomposition and generalized inverses. This monograph will be a useful resource for practitioners, instructors, and students taking elementary linear algebra. **Theory of Linear and Integer Programming John Wiley & Sons** *Theory of Linear and Integer Programming Alexander Schrijver Centrum voor Wiskunde en Informatica, Amsterdam, The Netherlands This book describes the theory of linear and integer programming and surveys the algorithms for linear and integer programming problems, focusing on complexity analysis. It aims at complementing the more practically oriented books in this field. A special feature is the author's coverage of important recent developments in linear and integer programming. Applications to combinatorial optimization are given, and the author also includes extensive historical surveys and bibliographies. The book is intended for graduate students and researchers in operations research, mathematics and computer science. It will also be of interest to mathematical historians. Contents 1 Introduction and preliminaries; 2 Problems, algorithms, and complexity; 3 Linear algebra and complexity; 4 Theory of lattices and linear diophantine equations; 5 Algorithms for linear diophantine equations; 6 Diophantine approximation and basis reduction; 7 Fundamental concepts and results on polyhedra, linear inequalities, and linear programming; 8 The structure of polyhedra; 9 Polarity, and blocking and anti-blocking polyhedra; 10 Sizes and the theoretical complexity of linear inequalities and linear programming; 11 The simplex method; 12 Primal-dual, elimination, and relaxation methods; 13 Khachiyan's method for linear programming; 14 The ellipsoid method for polyhedra more generally; 15 Further polynomiality results in linear programming; 16 Introduction to integer linear programming; 17 Estimates in integer linear programming; 18 The complexity of integer linear programming; 19 Totally unimodular matrices: fundamental properties and examples; 20 Recognizing total unimodularity; 21 Further theory related to total unimodularity; 22 Integral polyhedra and total dual integrality; 23 Cutting planes; 24 Further methods in integer linear programming; Historical and further notes on integer linear programming; References; Notation index; Author index; Subject index* **Linear Programming Algorithms and applications Springer Science & Business Media** *This text is based on a course of about 16 hours lectures to students of mathematics, statistics, and/or operational research. It is intended to introduce readers to the very wide range of applicability of linear programming, covering problems of manage ment, administration, transportation and a number of other uses which are mentioned in their context. The emphasis is on numerical algorithms, which are illustrated by examples of such modest size that the solutions can be obtained using pen and paper. It is clear that these methods, if applied to larger*

problems, can also be carried out on automatic (electronic) computers. Commercially available computer packages are, in fact, mainly based on algorithms explained in this book. The author is convinced that the user of these algorithms ought to be knowledgeable about the underlying theory. Therefore this volume is not merely addressed to the practitioner, but also to the mathematician who is interested in relatively new developments in algebraic theory and in some combinatorial theory as well. The chapters on duality, and on flow in networks, are particularly directed towards this aim and they contain theorems which might not be directly relevant to methods of computation. The application of the concept of duality to the theory of games is of historical interest. It is hoped that the figures, which illustrate the results, will be found illuminating by readers with active geometrical imagination. **A Beginner's Guide to Finite Mathematics For Business, Management, and the Social Sciences Springer Science & Business Media** *This second edition of A Beginner's Guide to Finite Mathematics takes a distinctly applied approach to finite mathematics at the freshman and sophomore level. Topics are presented sequentially: the book opens with a brief review of sets and numbers, followed by an introduction to data sets, histograms, means and medians. Counting techniques and the Binomial Theorem are covered, which provides the foundation for elementary probability theory; this, in turn, leads to basic statistics. This new edition includes chapters on game theory and financial mathematics. Requiring little mathematical background beyond high school algebra, the text will be especially useful for business and liberal arts majors.* **An Illustrated Guide to Linear Programming Courier Corporation** *Entertaining, nontechnical introduction covers basic concepts of linear programming and its relationship to operations research; geometric interpretation and problem solving, solution techniques, network problems, much more. Only high-school algebra needed.* **Elementary Linear Algebra Bookboon Algorithms Integer Programming and Combinatorial Optimization 15th International Conference, IPCO 2011, New York, NY, USA, June 15-17, 2011. Proceedings Springer Science & Business Media** *This book constitutes the proceedings of the 15th International Conference on Integer Programming and Combinatorial Optimization, IPCO 2011, held in New York, USA in June 2011. The 33 papers presented were carefully reviewed and selected from 110 submissions. The conference is a forum for researchers and practitioners working on various aspects of integer programming and combinatorial optimization with the aim to present recent developments in theory, computation, and applications. The scope of IPCO is viewed in a broad sense, to include algorithmic and structural results in integer programming and combinatorial optimization as well as revealing computational studies and novel applications of discrete optimization to practical problems.*