Record Nr. UNINA9911019669003321 Autore Ye Yinyu Titolo Interior point algorithms: theory and analysis / / Yinyu Ye Pubbl/distr/stampa New York, : Wiley, c1997 **ISBN** 9786613294593 9781283294591 1283294591 9781118032701 1118032705 9781118030950 1118030958 Descrizione fisica 1 online resource (438 p.) Collana Wiley-Interscience series in discrete mathematics and optimization Disciplina 519.7/2 Soggetti Programming (Mathematics) Linear programming 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. 365-408) and index. Nota di contenuto Interior Point Algorithms: Theory and Analysis; Contents; Preface; List of Figures; 1 Introduction and Preliminaries; 1.1 Introduction; 1.2 Mathematical Preliminaries: 1.2.1 Basic notations: 1.2.2 Convex sets: 1.2.3 Real functions; 1.2.4 Inequalities; 1.3 Decision and Optimization Problems: 1.3.1 System of linear equations: 1.3.2 System of nonlinear equations; 1.3.3 Linear least-squares problem; 1.3.4 System of linear inequalities; 1.3.5 Linear programming (LP); 1.3.6 Quadratic programming (QP); 1.3.7 Linear complementarity problem (LCP); 1.3.8 Positive semi-definite programming (PSP) 1.3.9 Nonlinear programming (NP)1.3.10 Nonlinear complementarity problem (NCP); 1.4 Algorithms and Computation Models; 1.4.1 Worstcase complexity; 1.4.2 Condition-based complexity; 1.4.3 Average complexity; 1.4.4 Asymptotic complexity; 1.5 Basic Computational Procedures; 1.5.1 Gaussian elimination method; 1.5.2 Choleski decomposition method; 1.5.3 The Newton method; 1.5.4 Solving ball-

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Sommario/riassunto

The first comprehensive review of the theory and practice of one of today's most powerful optimization techniques. The explosive growth of research into and development of interior point algorithms over the past two decades has significantly improved the complexity of linear programming and yielded some of today's most sophisticated computing techniques. This book offers a comprehensive and thorough treatment of the theory, analysis, and implementation of this powerful computational tool. Interior Point Algorithms provides detailed coverage of all basic and advanced aspects of th