Record Nr. UNINA9910460962603321 Autore Lau Lap Chi Titolo Iterative methods in combinatorial optimization // Lap Chi Lau, R. Ravi, Mohit Singh [[electronic resource]] Cambridge: .: Cambridge University Press. . 2011 Pubbl/distr/stampa 1-107-22177-3 **ISBN** 1-283-11116-0 9786613111166 1-139-07652-3 0-511-97715-8 1-139-08334-1 1-139-07880-1 1-139-08107-1 1-139-07080-0 Descrizione fisica 1 online resource (xi, 242 pages) : digital, PDF file(s) Collana Cambridge texts in applied mathematics;; 46 Disciplina 518/.26 Soggetti Iterative methods (Mathematics) Combinatorial optimization Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Title from publisher's bibliographic system (viewed on 05 Oct 2015). Note generali Nota di bibliografia Includes bibliographical references and index. Machine generated contents note: 1. Introduction; 2. Preliminaries; 3. Nota di contenuto Matching and vertex cover in bipartite graphs; 4. Spanning trees; 5. Matroids; 6. Arborescence and rooted connectivity; 7. Submodular flows and applications; 8. Network matrices; 9. Matchings; 10. Network design; 11. Constrained optimization problems; 12. Cut problems; 13. Iterative relaxation: early and recent examples; 14. Summary. Sommario/riassunto With the advent of approximation algorithms for NP-hard combinatorial optimization problems, several techniques from exact optimization such as the primal-dual method have proven their staying power and versatility. This book describes a simple and powerful method that is iterative in essence and similarly useful in a variety of settings for exact and approximate optimization. The authors highlight the commonality

and uses of this method to prove a variety of classical polyhedral

results on matchings, trees, matroids and flows. The presentation style is elementary enough to be accessible to anyone with exposure to basic linear algebra and graph theory, making the book suitable for introductory courses in combinatorial optimization at the upper undergraduate and beginning graduate levels. Discussions of advanced applications illustrate their potential for future application in research in approximation algorithms.