Record Nr. UNISA996466825903316 Quantum Annealing and Related Optimization Methods [[electronic **Titolo** resource] /] / edited by Arnab Das, Bikas K. Chakrabarti Pubbl/distr/stampa Berlin, Heidelberg:,: Springer Berlin Heidelberg:,: Imprint: Springer, , 2005 **ISBN** 3-540-31515-2 Edizione [1st ed. 2005.] 1 online resource (XIV, 378 p.) Descrizione fisica Collana Lecture Notes in Physics, , 0075-8450;; 679 Disciplina 530.12 Soggetti Mathematical physics Condensed matter Mathematical optimization Theoretical, Mathematical and Computational Physics **Condensed Matter Physics** Optimization Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Bibliographic Level Mode of Issuance: Monograph Nota di contenuto Tutorial: Introductory Material -- Quantum Annealing: Basics and Applications -- Other Optimizations. Quantum annealing employs quantum fluctuations in frustrated Sommario/riassunto systems or networks to anneal the system down to its ground state, or more generally to its so-called minimum cost state. Often this procedure turns out to be more effective, in multivariable optimization problems, than its classical counterpart utilizing tunable thermal fluctuations. This volume is divided into three parts. Part I is an extensive tutorial introduction familiarizing the reader with the background material necessary to follow the core of the book. Part II gives a comprehensive account of the fundamentals and applications of the quantum annealing method, and Part III compares quantum annealing with other related optimization methods. This is the first book entirely devoted to quantum annealing and will be both an invaluable primer and guidebook for all advanced students and researchers in this important field.