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| | Soggetti | Quantum computers |
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| | Nota di contenuto | Chapter 01- Introduction -- Chapter 02- Contextuality: the Compatibility-Hypergraph Approach -- Chapter 03- Contextuality: the Exclusivity-Graph Approach -- Chapter 04- The Exclusivity Principle and Its Consequences -- Appendix A- State-independent proofs of the Bell-Kochen-Specker Theorem. |
| | Sommario/riassunto | This book explores two of the most striking features of quantum theory – contextuality and nonlocality – using a formulation based on graph theory. Quantum theory provides a set of rules to predict probabilities of different outcomes in different experimental settings, and both contextuality and nonlocality play a fundamental role in interpreting the outcomes. In this work, the authors highlight how the graph approach can lead to a better understanding of this theory and its applications. After presenting basic definitions and explaining the non-contextuality hypothesis, the book describes contextuality scenarios using compatibility hypergraphs. It then introduces the exclusivity graph approach, which relates a number of important graph-theoretical concepts to contextuality. It also presents open problems such as the |

so-called Exclusivity Principle, as well as a selection of important topics, like sheaf-theoretical approach, hypergraph approach, and alternative proofs of contextuality.