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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Elementary mathematical framework for open quantum d-level systems : decoherence overview / G. Kimura -- Quantum error correction and fault-tolerant quantum computing / F. Gaitan and R. Li -- Composite pulses as geometric quantum gates / Y. Ota and Y. Kondo -- Quantum wipe effect / A. SaiToh, R. Rahimi, M. Nakahara -- Holonomic quantum gates using isospectral deformation of Ising model / M. Bando ... [et al.].
Sommario/riassunto	This volume provides an overview on the decoherence suppression methods in quantum computing, open quantum systems, quantum error correction and fault-tolerant quantum computing. It also includes concepts in geometric quantum computing by composite pulses. Quantum wipe effect is explained as an approach for suppressing decoherence of the system. A short contribution on the implementation of holonomic quantum gates with NMR (Nuclear Magnetic Resonance) is presented. The lecture notes contributed to this volume are prepared in

a self-contained manner hence readers with limited knowledge on the topics could understand the discussions by following the sequence of chapters which begin with mathematical frameworks and progress to the most updated outcomes of the fields. The volume will be useful for a broad audience from graduate students to researchers interested in the field.
