

1. Record Nr.	UNINA9910143969203321
Titolo	Entanglement and Decoherence [[electronic resource]] : Foundations and Modern Trends // edited by Andreas Buchleitner, Carlos Viviescas, Markus Tiersch
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2009
ISBN	3-540-88169-7
Edizione	[1st ed. 2009.]
Descrizione fisica	1 online resource (X, 320 p.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 768
Disciplina	530.12
Soggetti	Quantum computers Spintronics Quantum physics Information theory Quantum optics Quantum Information Technology, Spintronics Quantum Physics Information and Communication, Circuits Quantum Optics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Geometry of State Spaces -- Basic Concepts of Entangled States -- Topology and Quantum Computing -- Entanglement in Phase Space -- to Decoherence Theory -- Diffusive Spin Transport.
Sommario/riassunto	Entanglement and (de-)coherence arguably define the central issues of concern in present day quantum information theory. Entanglement being a consequence of the quantum mechanical superposition principle for composite systems, a better understanding of the environment-induced destruction of coherent superposition states is required to devise novel strategies for harvesting quantum interference phenomena. The present book collects a series of advanced lectures on the theoretical foundations of this active research field, from mathematical aspects underlying quantum topology to mesoscopic transport theory. All lectures start out from an elementary level and

proceed along a steep learning curve. This makes the material particularly suitable for student seminars on the more fundamental theoretical aspects of quantum information, and equally useful as supplementary reading for advanced lectures on this topic.
