

1. Record Nr.	UNINA9910786011503321
Autore	Kholevo A. S (Aleksandr Semenovich)
Titolo	Quantum systems, channels, information [[electronic resource]] : a mathematical introduction // Alexander S. Holevo
Pubbl/distr/stampa	Berlin, : Walter de Gruyter GmbH & Co. KG, 2012
Descrizione fisica	1 online resource (364 p.)
Collana	De Gruyter Studies in Mathematical Physics ; ; 16
Disciplina	530.15
Soggetti	Information theory in physics Quantum entropy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front matter -- Preface -- Contents -- Part I. Basic structures -- Chapter 1. Vectors and operators -- Chapter 2. States, observables, statistics -- Chapter 3. Composite systems and entanglement -- Part II. The primary coding theorems -- Chapter 4. Classical entropy and information -- Chapter 5. The classical-quantum channel -- Part III. Channels and entropies -- Chapter 6. Quantum evolutions and channels -- Chapter 7. Quantum entropy and information quantities -- Part IV. Basic channel capacities -- Chapter 8. The classical capacity of quantum channel -- Chapter 9. Entanglement-assisted classical communication -- Chapter 10. Transmission of quantum information -- Part V. Infinite systems -- Chapter 11. Channels with constrained inputs -- Chapter 12. Gaussian systems -- Bibliography -- Index
Sommario/riassunto	The main emphasis of this work is the mathematical theory of quantum channels and their entropic and information characteristics. Quantum information theory is one of the key research areas, since it leads the way to vastly increased computing speeds by using quantum systems to store and process information. Quantum cryptography allows for secure communication of classified information. Research in the field of quantum informatics, including quantum information theory, is in progress in leading scientific centers throughout the world. The past years were marked with impressive progress made by several researchers in solution of some difficult problems, in particular, the additivity of the entropy characteristics of quantum channels. This

suggests a need for a book that not only introduces the basic concepts of quantum information theory, but also presents in detail some of the latest achievements.
