1. Record Nr. UNINA9910812304803321

| | |
|---|---|
| Autore | Kholevo A. S (Aleksandr Semenovich) |
| Titolo | Quantum systems, channels, information : a mathematical introduction / / Alexander S. Holevo |
| Pubbl/distr/stampa | Berlin, : Walter de Gruyter GmbH & Co. KG, 2012 |
| Edizione | [1st ed.] |
| Descrizione fisica | 1 online resource (364 p.) |
| Collana | De Gruyter Studies in Mathematical Physics ; ; 16 |
| Disciplina | 530.15 |
| Soggetti | Information theory in physics<br>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.