1. Record Nr. UNINA9911011776703321

Autore	Li Dongfen
Titolo	Quantum Teleportation Under Noise : Key Technologies and Applications / / by Dongfen Li
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	9783031912504
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (241 pages)
Disciplina	530.12 003.54
Soggetti	Quantum computing Coding theory Information theory Quantum computers Quantum communication Computer science Quantum Information Coding and Information Theory Quantum Computing Quantum Communications and Cryptography Models of Computation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Introduction -- Chapter 2. Theoretical basis -- Chapter 3. Construction of a framework for high fidelity entangled quantum teleportation channel -- Chapter 4. Quantum information splitting of Bell states and arbitrary states in different channels -- Chapter 5. Controllable multiple degree of freedom quantum teleportation protocol for immune noise -- Chapter 6. Application of fault-tolerant quantum teleportation in noisy channel -- Chapter 7. Summary and Outlook.
Sommario/riassunto	This book offers a deep dive into quantum teleportation and immune noise models, providing cutting-edge solutions to challenges in noisy quantum communication systems. It covers advanced theories and

practical methods for building robust, high-fidelity quantum channels that ensure secure communication even in noisy environments, making it a vital resource for researchers and professionals in quantum information science. Key topics include quantum teleportation protocols, immune noise models, quantum information splitting, and multi-degree-of-freedom quantum teleportation. By developing a unified framework for high-fidelity quantum channels, the book tackles major issues like "entanglement death," decoherence, and channel capacity limitations. It offers solutions to improve quantum state fidelity, channel performance, and security, enhancing the practicality of quantum teleportation in areas like national defense, finance, and secure communication. The book targets academic researchers, engineers, and professionals in quantum information, cryptography, and secure communications, along with advanced students interested in quantum teleportation in noisy environments.