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communication; 20. Entanglement-assisted classical communication; 21. Coherent communication with noisy resources; 22. Private classical communication; 23. Quantum communication; 24. Trading resources for communication; 25. Summary and outlook; Appendix A. Miscellaneous mathematics; Appendix B. Monotonicity of quantum relative entropy; References; Index.

Sommario/riassunto

Finally, here is a modern, self-contained text on quantum information theory suitable for graduate-level courses. Developing the subject 'from the ground up' it covers classical results as well as major advances of the past decade. Beginning with an extensive overview of classical information theory suitable for the non-expert, the author then turns his attention to quantum mechanics for quantum information theory, and the important protocols of teleportation, super-dense coding and entanglement distribution. He develops all of the tools necessary for understanding important results in quantum information theory, including capacity theorems for classical, entanglement-assisted, private and quantum communication. The book also covers important recent developments such as superadditivity of private, coherent and Holevo information, and the superactivation of quantum capacity. This book will be warmly welcomed by the upcoming generation of quantum information theorists and the already established community of classical information theorists.
