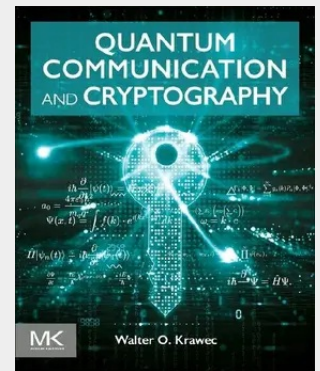


Quantum Communication and Cryptography

Quantum Communication and Cryptography introduces readers to the theory of quantum cryptography, with a focus will on quantum key distribution (QKD) and more advanced quantum cryptographic protocols beyond QKD. It contains a brief introduction to the field of modern cryptography that is needed to fully appreciate and understand how quantum cryptographic systems are proven secure, and how they can be safely used in combination with current day classical systems. Readers are then introduced to quantum key distribution (QKD) - perhaps the most celebrated, and currently the most practical, of quantum cryptographic techniques. Basic protocols are described, and security proofs are given, providing readers with the knowledge needed to understand how QKD protocols are proven secure using modern, state- of-the-art definitions of security. Following this, more advanced QKD protocols are discussed, along with alternative quantum and classical methods to improve QKD performance. Finally, alternative quantum cryptographic protocols are covered, along with a discussion on some of the practical considerations of quantum secure communication technology. Throughout, protocols are described in a clear and consistent manner that still provides comprehensive, theoretical proofs and methods.

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