

A New Quantum Communication Scheme by Using Bell States

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Abstract: A new quantum communication scheme based on entanglement swapping is presented. Simplified calculation symbols are adopted to realize the process. Quantum key distribution and quantum secure direct communication can be simultaneously accomplished in the scheme. Two legitimate communicators can secretly share four certain key bits and four random key bits via three EPR pairs (quantum channels).

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Key words: quantum key distribution, quantum secure direct communication, Bell-state measurements, security

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