

Multiparty Quantum Secret Sharing of Secure Direct Communication Using Teleportation

WANG Jian, ZHANG Quan, and TANG Chao-Jing

School of Electronic Science and Engineering, National University of Defense Technology, Changsha 410073, China

(Received: 2006-3-17; Revised: 2006-6-6)

Abstract: We present an (n,n) threshold quantum secret sharing scheme of secure direct communication using Greenberger-Horne-Zeilinger state and teleportation. After ensuring the security of the quantum channel, the sender encodes the secret message directly on a sequence of particle states and transmits it to the receivers by teleportation. The receivers can recover the secret message by combining their measurement results with the sender's result. If a perfect quantum channel is used, our scheme is completely secure because the transmitting particle sequence does not carry the secret message. We also show our scheme is secure for noise quantum channel.

PACS: 03.67.Dd, 03.65.Ud

Key words: quantum secret sharing, quantum teleportation

[\[Full text: PDF\]](#)

Close