

Teleportation of N-Particle Entangled GHZ State via Entanglement Swapping

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Abstract: In this scheme, N non-maximally entangled particle pairs are used as quantum channel to teleport an unknown N -particle entangled GHZ state via entanglement swapping. In order to realize this teleportation, the sender Alice operates Bell-state measurement on particles belonging to herself. Then she informs the results to the receiver Bob through classical communication. According to the results, Bob operates corresponding transformation to reconstruct the initial state. The advantage of this scheme is that it needs only one common unitary matrix for Alice's different results, which has a more general meaning. As a special case, teleporting an unknown three-particle entangled GHZ state is proposed.

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Key words: quantum teleportation, N -particle entangled GHZ state, entanglement swapping

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