

Teleportation with an Arbitrary Mixed Resource as a Trace-Preserving Quantum Channel

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(Received: 2002-3-29; Revised:)

Abstract: General conditions are given in order to perform a perfect teleportation process in the case where the Hilbert spaces involved have different dimensions. An explicit expression is obtained for the quantum channel associated with the standard teleportation protocol T_0 with an arbitrary mixed state resource. The transmission fidelity of the corresponding quantum channel is given.

PACS: 03.67.-a, 89.70.+c, 03.65.-w

Key words: teleportation, fidelity

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