

Intrinsic Decoherence on Two-Qubit Heisenberg XX Chain

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Abstract: Quantum teleportation is investigated by using the entangled states of two-qubit Heisenberg XX chain in an external uniform magnetic field as resources in the model of Milburn's intrinsic decoherence. Though intrinsic decoherence on quantum entanglement and quantum teleportation exerts different effects in different initial systems, proper magnetic fields and probabilities of different eigenstates in the initial states can weaken the effects.

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Key words: Heisenberg chain, fidelity, intrinsic decoherence, entanglement

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