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Three-qubit remote entanglement by joint measurement and feedback control SONG ZHANG, LEIGH MARTIN, K. BIRGITTA WHALEY, Univ of California - Berkeley — For remote qubits, a direct non-local interaction is generally not available, in part because the coherence of any transmitted signal is degraded by loss. In this situation, joint measurement and feedback control nevertheless allow creation of entanglement between remote qubits. Such schemes are known for deterministic generation of Bell states, but the generalization to larger systems has not been studied. We present such a control protocol based on the average sense local optimality (ASLO) approach for generating entanglement in a three-qubit system without an entangling Hamiltonian. Analytical and numerical methods to enhance the generation of different types of three-qubit entanglement are presented.

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