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Entangling two spatially separated qubits via interaction with nonclassical radiation[1] EYOB SETE, Department of Physics and Astronomy, Texas A&M University, SUMANTA DAS, Max-Planck-Institute fur Kernphysik — We propose a scheme for entangling two spatially separated noninteracting qubits using two-mode squeezed light in a cavity. Unlike other methods that typically require dipolar coupling for creating entanglement, our proposal relies solely on the interaction of the qubits with the squeezed cavity field. The squeezed field induces exchange of correlated photons which leads to transfer of entanglement from the field to discrete entanglement between qubits. Our scheme exhibits substantial steady-state entanglement which is robust against decoherence under the strong squeezing condition. In addition, we find that the entanglement generated between two asymmetric qubits is stronger than that generated by identical ones and crucially depends on the degree of squeezing.

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