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Scheme for Quantum Entanglement Swapping on Cavity QED System

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Abstract: We propose a scheme for realizing quantum entanglement swapping between the atoms in cavity QED. With only virtual excitation of the cavity during the interaction between the atoms and cavity, the scheme is insensitive to the cavity mode states and the cavity decay. The ideas can also be utilized for realizing entanglement swapping between the atomic levels in a single atom and the atomic levels in the Bell states and between the atomic levels in the Bell states and the atomic levels in the W states.

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