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Quantum Teleportation without Classical Channel[1] ZHENGHONG LI, Institute for Quantum Science and Engineering (IQSE) and Department of Physics and Astronomy, Texas AM University, M. AL-AMRI, The National Center for Applied Physics, KACST, M. SUHAIL ZUBAIRY, Institute for Quantum Science and Engineering (IQSE) and Department of Physics and Astronomy, Texas AM University — We show that quantum teleportation can be achieved without the need of classical channel. Our protocol does not require prearranged entangled photon pairs and Bell measurements. By utilizing quantum Zeno effect and couterfactuality, we can entangle and disentangle a photon and an atom by non-local interaction. It is shown that quantum information is completely transferred from an atom to photon due to controllable disentanglement processes. There is no need to cross check teleportation results via classical channels. Our protocol is a complement to the conventional quantum teleportation.

[1]Quantum Teleportation without Classical Channel

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