

Effect of depolarizing noise on entangled photons

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Entangled photons are important resources for quantum information. Especially, in quantum cryptography, the polarization entangled photons are highly secure. However, the entanglement of photon can hold in isolated system. In realistic system, the entangled photons inevitably interact with environment. In this work, we study the effect of depolarizing noise on the two entangled qubits. The entangled photon are prepared with different entangled states and send to the depolarizing channel. We measure the entanglement by using concurrence. When the entangled photons interact to the depolarizing noise, the entanglement property of photons will be degraded. The concurrence of entangled photons reduce to 0.

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