

# Entanglement Swapping of Noisy Qubits and Qudits

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Entanglement swapping is a key component of quantum networking and other quantum information processing applications based on entanglement distribution. Here we present a comprehensive analysis of entanglement swapping of noisy qubits using concurrence as a measure of entanglement. We examine entanglement swapping of qubit pairs in Schmidt bases and discuss relations between concurrences of the input and output states. Compared to qubits, qudits provide a larger state space to store and process information and can provide simplification and efficiency enhancement of networking and entanglement distribution. For qudits, we use the I-concurrence as a measure of entanglement and examine the entanglement swapping protocol