

Abstract Submitted
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Delayed Quantum Feedback HANNES PICHLER, ITAMP, Harvard University — We study the dynamics of photonic quantum circuits consisting of nodes coupled by quantum channels. We are interested in the regime where the time delay in communication between the nodes is significant. This includes the problem of quantum feedback, where a quantum signal is fed back on a system with a time delay. We develop a tensor network state approach to solve the quantum stochastic Schrödinger equation with time delays, which accounts in an efficient way for the entanglement of nodes with the stream of emitted photons in the waveguide, and thus the non-Markovian character of the dynamics.

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