

Abstract Submitted
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Reservoir-engineered bosonic entanglement using a single reservoir MIKHAIL MAMAEV, AASHISH CLERK, McGill Univ — Using engineered dissipation is a novel and effective tool for generating and stabilizing entanglement in bosonic systems, with applications to traditional AMO systems, optomechanical systems and superconducting quantum circuits. Standard approaches rely on the use of two non-locally coupled reservoirs, something that can be challenging to implement experimentally. We present an alternative approach that can accomplish the same task with the use of just a single reservoir, realized in a system having two tunnel-coupled bosonic modes and local parametric driving. Our scheme can generate pure entangled states with in principle arbitrarily high amounts of entanglement. It also differs from previous single-reservoir approaches to entanglement. We discuss possible implementations of our scheme in both optomechanical systems and superconducting circuits.

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