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Non-Markovian dynamics of BIC generation via single-photon scattering

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The generation of bound states in the continuum lies at the heart of waveguide quantum electrodynamics platforms capability in managing entanglement. We prove that a properly engineered parity-invariant single photon impinging on an emitters pair in the ground state can outperform entanglement by relaxation procedures. The simulation of the proposed scheme is based on tensor network methods able to include time delays in
collision models. We determine the time evolution of the complete quantum system, referred to emitters and photon state, both along the delay and at the output.

Title

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