

Quantum Physics

Bright and Dark periods in the Entanglement Dynamics of Interacting Qubits in Contact with the Environment

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Interaction among the qubits are basis to many quantum logic operations. We report how such inter-qubit interactions can lead to new features, in the form of bright and dark periods in the entanglement dynamics of two qubits subject to environmental perturbations. These features are seen to be precursors to the well known phenomenon of sudden death of entanglement [Yu && Eberly, Phys. Rev. Lett. **93**, 140404 (2004)] for noninteracting qubits. Further we find that the generation of bright and dark periods are generic and occur for wide varieties of the models of environment. We present explicit results for two popular models.

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