

Preservation of bipartite pseudo-entanglement in solids using dynamical decoupling

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A crucial challenge for future quantum technologies is to protect fragile entanglement against environment-induced decoherence. Here we demonstrate experimentally that dynamical decoupling can preserve bipartite pseudo-entanglement in phosphorous donors in a silicon system. In particular, the lifetime of pseudo-entangled states is extended from $0.4 \mu\text{s}$ in the absence of decoherence control to $30 \mu\text{s}$ in the presence of a two-flip dynamical decoupling sequence.

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