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Title:	Controlling decoherence via PT-symmetric non-Hermitian open quantum systems
Authors:	Dey, Sanjib (/jspui/browse?type=author&value=Dey%2C+Sanjib) Raj, Aswathy (/jspui/browse?type=author&value=Raj%2C+Aswathy) Goyal, S. K. (/jspui/browse?type=author&value=Goyal%2C+S.K.)
Keywords:	Decoherence Quantum entanglement Open quantum systems PT-symmetry
Issue Date:	2019
Publisher:	Elsevier
Citation:	Physics Letters, Section A: General, Atomic and Solid State Physics, 383(30).
Abstract:	We have studied the effect of a non-Hermitian Bosonic bath on the dynamics of a two-level spin system. The non-Hermitian Hamiltonian of the bath is chosen such that it converges to the harmonic oscillator Hamiltonian when the non-Hermiticity is switched off. We calculate the dynamics of the spin system and found that the non-Hermiticity can have positive as well as negative effects on the coherence of the system. However, the decoherence can be completely eliminated by choosing the non-Hermiticity parameter and the phase of the system bath interaction appropriately. We have also studied the effect of this bath on the entanglement of a two-spin system when the bath is acting only on one spin.
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