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Title:	Experimentally freezing quantum discord in a dephasing environment using dynamical decoupling
Authors:	Singh, Harpreet (/jspui/browse?type=author&value=Singh%2C+Harpreet) Arvind (/jspui/browse?type=author&value=Arvind) Dorai, K. (/jspui/browse?type=author&value=Dorai%2C+K.)
Keywords:	quantum dephasing environment dynamical decoupling
Issue Date:	2017
Publisher:	Institute of Physics Publishing
Citation:	EPL, 118 (5)
Abstract:	The discovery of the intriguing phenomenon that certain kinds of quantum correlations remain impervious to noise up to a specific point in time and then suddenly decay, has generated immense recent interest. We exploit dynamical decoupling sequences to prolong the persistence of time-invariant quantum correlations in a system of two NMR qubits decohering in independent dephasing environments. We experimentally prepare two-qubit Bell-diagonal quantum states that interact with individual noise channels and demonstrate that we are able to freeze quantum correlations over long time scales via dynamical decoupling. Our results have important implications for experimental quantum control and for quantum information processing protocols
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