DSpace@IISERMohali (/jspui/)
/ **Publications of IISER Mohali (/jspui/handle/123456789/4)**
/ **Research Articles (/jspui/handle/123456789/9)**

Please use this identifier to cite or link to this item: `http://hdl.handle.net/123456789/1670`

Title:	Author Correction: Non-Markovianity of qubit evolution under the action of spin environment
Authors:	Goyal, S.K. (/jspui/browse?type=author&value=Goyal%2C+S.K.)
Keywords:	Qubit evolution Spin environment
Issue Date:	2019
Publisher:	Nature Publishing Group
Citation:	Scientific Reports, 9(1).
Abstract:	The question, whether an open system dynamics is Markovian or non-Markovian can be answered by studying the direction of the information flow in the dynamics. In Markovian dynamics, information must always flow from the system to the environment. If the environment is interacting with only one of the subsystems of a bipartite system, the dynamics of the entanglement in the bipartite system can be used to identify the direction of information flow. Here we study the dynamics of a two-level system interacting with an environment, which is also a heat bath, and consists of a large number of two-level quantum systems. Our model can be seen as a close approximation to the 'spin bath' model at low temperatures. We analyze the Markovian nature of the dynamics, as we change the coupling between the system and the environment. We find the Kraus operators of the dynamics for certain classes of couplings. We show that any form of time-independent or time-polynomial coupling gives rise to non-Markovianity. Also, we witness non-Markovianity for certain parameter values of time-exponential coupling. Moreover, we study the transition from non-Markovian to Markovian dynamics as we change the value of coupling strength.
Description:	Only IISERM authors are available in the record.
URI:	https://www.nature.com/articles/s41598-019-55327-z (https://www.nature.com/articles/s41598-019-55327-z) http://hdl.handle.net/123456789/1670 (http://hdl.handle.net/123456789/1670)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format	
Need to add pdf.odt (/jspui/bitstream/123456789/1670/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text	View/Open (/jspui/bitstream/12345...

Show full item record (/jspui/handle/123456789/1670?mode=full)

(/jspui/handle/123456789/1670/statistics)