Library
Indian Institute of Science Education and Research Mohali

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/123456789/3252`

Title:	A comparative study of system size dependence of the effect of non-unitary channels on different classes of quantum states
Authors:	Dogra, S. (/jspui/browse?type=author&value=Dogra%2C+S.) Arvind (/jspui/browse?type=author&value=Arvind)
Keywords:	Quantum channels Quantum decoherence Quantum dissipation
Issue Date:	2020
Publisher:	Springer
Citation:	Quantum Information Processing, 19(11)
Abstract:	We investigate the effect of different types of non-unitary quantum channels on multiqubit quantum systems. For an n-qubit system and a particular channel, in order to draw unbiased conclusions about the system as a whole as opposed to specific states, we evolve a large number of randomly generated states under the given channel. We increase the number of qubits and study the effect of system size on the decoherence processes. The entire scheme is repeated for various types of environments which include dephasing channel, depolarizing channel, collective dephasing channel and zero temperature bath. Non-unitary channels representing the environments are modeled via their Kraus operator decomposition or master equation approach. Further, for a given n we restrict ourselves to the study of particular subclasses of entangled states, namely the GHZ-type and W-type states. We generate random states within these classes and study the class behaviors under different quantum channels for various values of n
Description:	Only IISERM authors are available in the record.
URI:	https://link.springer.com/article/10.1007/s11128-020-02904-1 (https://link.springer.com/article/10.1007/s11128-020-02904-1) http://hdl.handle.net/123456789/3252 (http://hdl.handle.net/123456789/3252)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format	
Need to add pdf.odt (/jspui/bitstream/123456789/3252/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text	View/Open (/jspui/bitstream/12345...

Show full item record (/jspui/handle/123456789/3252?mode=full)

📊 (/jspui/handle/123456789/3252/statistics)