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Title:	Evolution of two-mode quantum states under a dissipative environment:
Other Titles:	Comparison of the robustness of squeezing and entanglement resources
Authors:	Rishabh (/jspui/browse?type=author&value=Rishabh) Chandan, Kumar (/jspui/browse?type=author&value=Chandan%2C+Kumar) Narang, Geetu (/jspui/browse?type=author&value=Narang%2C+Geetu) Arvind (/jspui/browse?type=author&value=Arvind)
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Abstract:	We explore the relative robustness of single-mode squeezing and entanglement (which are quantum resources interconvertible via passive optics) for two-mode Gaussian states under different dissipative environments. When the individual modes interact with identical local baths, entanglement and squeezing decay at the same rate. However, when only one of the modes interacts with a local bath, the comparative robustness of entanglement and squeezing depends on the initial squeezing of the state. Similarly, when the system interacts with a global bath, the robustness of entanglement and squeezing depends on the initial squeezing. Thus depending on the nature of dissipative environments and the initial squeezing of the state, one can select the more robust form of resource out of squeezing and entanglement to store quantumness. This can be used to effectively enhance the performance of various quantum information processing protocols based on continuous variable Gaussian states.
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