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Title:	Entanglement properties of positive operators with ranges in completely entangled subspaces
Authors:	Sengupta, R. (/jspui/browse?type=author&value=Sengupta%2C+R.) Arvind (/jspui/browse?type=author&value=Arvind)
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Abstract:	We prove that the projection on a completely entangled subspace S of maximum dimension obtained by Parthasarathy [K. R. Parthasarathy, Proc. Indian Acad. Sci. Math. Sci. 114, 365 (2004)PIAMDO0253-414210.1007/BF02829441] in a multipartite quantum system is not positive under partial transpose. We next show that a large number of positive operators with a range in S also have the same property. In this process we construct an orthonormal basis for S and provide a theorem to link the constructions of completely entangled subspaces due to Parthasarathy (as cited above), Bhat [B. V. R. Bhat, Int. J. Quantum Inf. 4, 325 (2006)0219-749910.1142/S0219749906001797], and Johnston [N. Johnston, Phys. Rev. A 87, 064302 (2013)PLRAAN1050-294710.1103/PhysRevA.87.064302].
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