

Erratum: Minimal Conditions for Local Pure-State Entanglement Manipulation [Phys. Rev. Lett. 83, 1455 (1999)]

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The extension of Theorem 1 in [1] to target mixed states [see Eq. (9) and surrounding text] does not in fact follow in the manner stated in the text. As was pointed out to us by Vidal [2], our argument implicitly requires the ensemble decomposition of ρ that minimizes the sum in Eq. (9) to be independent of the entanglement monotone E_j being considered. Since we have been unable to prove this statement one way or the other, the matter remains inconclusive in general.

Note, however, that in the case of 2-qubit states there is only one nontrivial monotone (E_2) and the statement does indeed hold. In addition, Vidal has recently been able to calculate explicitly the value of the convex roof extension in Eq. (9) for this case [3]. This therefore provides a complete solution to the question “which local transformations may be realized on a 2-qubit pure state?”.

[1] D. Jonathan and M.B. Plenio, Phys. Rev. Lett. **83**, 1455 (1999).

[2] G. Vidal (private communication).

[3] G. Vidal, e-print quant-ph/0003002.