

Quantum Physics

All entangled states are useful for channel discrimination

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(Submitted on 15 Jan 2009 (v1), last revised 16 Jul 2009 (this version, v2))

We prove that every entangled state is useful as a resource for the problem of minimum-error channel discrimination. More specifically, given a single copy of an arbitrary bipartite entangled state, it holds that there is an instance of a quantum channel discrimination task for which this state allows for a correct discrimination with strictly higher probability than every separable state.

Comments: 5 pages, more similar to the published version

Subjects: **Quantum Physics (quant-ph)**

Journal reference: Phys. Rev. Lett. 102, 250501 (2009)

DOI: [10.1103/PhysRevLett.102.250501](https://doi.org/10.1103/PhysRevLett.102.250501)Cite as: [arXiv:0901.2118v2](https://arxiv.org/abs/0901.2118v2) [quant-ph]

Submission history

From: Marco Piani [[view email](#)]**[v1]** Thu, 15 Jan 2009 17:42:21 GMT (11kb)**[v2]** Thu, 16 Jul 2009 21:12:11 GMT (12kb)*[Which authors of this paper are endorsers?](#)*

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