

Watrous, John**Mixing doubly stochastic quantum channels with the completely depolarizing channel.**(English) [Zbl 1172.81322](#)

Quantum Inf. Comput. 9, No. 5-6, 406-413 (2009).

Summary: It is proved that every doubly stochastic quantum channel that is properly averaged with the completely depolarizing channel can be written as a convex combination of unitary channels. It follows that within the space of doubly stochastic quantum channels, there is a ball with positive radius around the completely depolarizing channel within which all channels are convex combinations of unitary channels.

MSC:[81P68](#) Quantum computation[94A40](#) Channel models (including quantum) in information and communication theoryCited in **6** Documents**Keywords:**

doubly stochastic quantum channels; random unitary channels; mixed unitary channels; theory of quantum information

Full Text: [arXiv](#)