

Abstract Submitted
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Classical Communication with Stimulated Emission over Zero-Capacity Optical Quantum Channels¹ LASZLO GYONGYOSI, SANDOR IMRE, Budapest University of Technology and Economics — The superactivation of zero-capacity optical quantum channels makes it possible to use two zero-capacity optical quantum channels with a positive joint capacity for their output. The phenomenon is rooted in the extreme violation of additivity of the channel capacities of quantum channels. Recently, the most important discovery in quantum information theory was the possibility of transmitting quantum information over zero-capacity quantum channels. Before our work, the superactivation of the classical capacity of noisy optical quantum channels was an open question and seemed to be completely impossible. We show that using photon-based encoder and decoder setting, classical information can also be transmitted over the combination of zero-capacity optical quantum channels. The proposed scheme requires only the most natural process that occurs during stimulated emission.

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