

Abstract Submitted
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Filling the gap between quantum no-cloning and classical duplication¹ MINGHAO WANG, QINGYU CAI, Wuhan Institute of Physics and Mathematics, CAS — The correspondence principle suggests that a quantum description for the microworld should be naturally transitioned to a classical description in the classical limit, while it seems there were a big gap between quantum no-cloning and classical duplication. In this paper, we prove that a classical duplication process can be realized with a universal quantum cloning machine. In classical world, information is encoded in a large number of quantum states instead of one quantum state. When errors occurred in a small part of the quantum states were tolerated, the fidelity of duplicated copies of classical information could approach unity. That is, classical information duplication is equal to a redundant quantum cloning process with self-correcting.

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