

# Chiral Maxwell demon in a quantum Hall system with a localized impurity

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We investigate the role of chirality on the performance of a Maxwell demon implemented in a quantum Hall bar with a localized impurity. Within a stochastic thermodynamics description we investigate the ability of such a demon to drive a current against a bias. We show that the ability of the demon to perform is directly related to its ability to extract information from the system. The key features of the proposed Maxwell demon are the topological properties of the quantum Hall system. The asymmetry of the electronic interactions felt at the localized state when the magnetic field is reversed joined to the fact that we consider energy dependent (and asymmetric) tunneling barriers that connect such state with the Hall edge modes allow the demon to properly work.