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Information driven current in a quantum Maxwell demon[1] SEBASTIAN DEFFNER, Univ of Maryland-College Park — We describe a minimal model of a quantum Maxwell demon obeying Hamiltonian dynamics. The model is solved exactly, and we analyze its steady-state behavior. We find that writing information to a quantum memory induces a probability current through the demon, which is the quantum analog of the classical Maxwell demon's action. Our model offers a simple and pedagogical paradigm for investigating the thermodynamics of quantum information processing.

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