

Abstract Submitted
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Signatures and Implementations of Adiabatic Quantum Pumping

KUNAL DAS, Fordham University — We explore the mechanism of adiabatic quantum pumping from a fundamental quantum mechanical perspective, and consider analogies with other adiabatic processes. We discuss ideas for generalizing the mechanism to alternate entities other than charge and spin and in alternative physical systems. Our study is motivated by and grounded in possibilities of easier experimental realizations to get around the difficulties encountered in previous mesoscopic experiments. In addition we wish to have an unambiguous definition and signature for the phenomenon of quantum pumping.

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