

Abstract Submitted
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Divergence of the Thermopower Without a Quantum Phase Transition KRIDSANAPHONG LIMTRAGOOL, PHILIP PHILLIPS, Univ of Illinois - Urbana — It is generally believed that divergent thermopowers require an underlying quantum phase transition. We show here in two exactly solvable models that this is not the case. We study the quantum XY and Kitaev models and show that the thermopower diverges in a parameter space that has nothing to do with the phase transition. The divergence is tied to a zero of the Onsager coefficient L_{11} . The zero of L_{11} is linked to a sign change in the effective charge and a vanishing of the band velocity. At such points, there is no thermodynamic signature only a divergent thermopower. Implications for interpreting divergent thermopowers as phase transitions will be discussed.

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