

Abstract Submitted
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Nonequilibrium exact solution for a charge density wave ordered system driven by a large electric field at zero temperature¹ WEN SHEN, JAMES FREERICKS, Georgetown University — We generalize the Bloch oscillation problem to the case where a system is in an ordered charge density wave (CDW) phase as described by the Falicov-Kimball model. This problem can be solved exactly at zero temperature and involves evaluating a 2x2 matrix-valued time-ordered product. We examine both the density of states and the current and how they evolve with time after the field is turned on. We do not see any clear evidence for a melting of the CDW due to the presence of a large field, but we do see interesting behavior in the density of states at the Bloch frequencies for different values of the field and interaction strength.

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