Decay of Bloch oscillations in the charge-density-wave ordered phase of an all electronic charge density wave state OLEG MATVEEV, Department of Physics, Georgetown University, Washington, DC , ANDRIJ SHVAIKA, Institute for Condensed Matter Physics of the National Academy of Sciences of Ukraine, Lviv, Ukraine, THOMAS DEVEREAUX, Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA, USA, JAMES FREERICKS, Department of Physics, Georgetown University, Washington, DC — The charge-density-wave phase of the Falicov-Kimball model displays a number of anomalous behavior including the appearance of subgap density of states as the temperature increases. These subgap states should have a significant impact on transport properties, particularly the nonlinear response of the system to a large dc electric field. Using the Kadanoff-Baym-Keldysh formalism, we employ nonequilibrium dynamical mean-field theory to exactly solve for this nonlinear response. We examine both the current and the order parameter of the conduction electrons as the ordered system is driven by a dc electric field.

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