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Title: Joule Heating in Bad Metals

Abstract: I will first review why it is important to disentangle the effects of electronic interactions and electron-lattice interactions in unconventional metals. I will then describe an observable process that depends crucially on electron-lattice interactions: the transfer of energy from hot electrons to a cooler lattice. Textbook discussion of this effect build upon weakly interacting electronic quasiparticles and may well not be applicable in bad metals. I will present a formula for rate at which this energy transfer occurs in the absence of quasiparticles. I will illustrate the use of this formula using recent EELS data as well as Monte-Carlo simulations of the Hubbard model.