

Abstract Submitted
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Charge dynamics near the onset of charge-density-wave (CDW) order in La-124 cuprates¹ P. G. BAITY, DRAGANA POPOVIĆ, Dept. of Phys. & Natl. High Magnetic Field Lab., Florida State Univ., T. SASAGAWA, Tokyo Inst. of Tech. — The dynamics of charge-ordered states is one of the central unresolved issues in underdoped cuprate high-temperature superconductors. By measuring nonequilibrium charge transport in $\text{La}_{1.48}\text{Nd}_{0.4}\text{Sr}_{0.12}\text{CuO}_4$ across the CDW (and structural) transition, we have found evidence for collective dynamics of domains in the CDW-ordered phase: although they are strongly pinned by disorder, the domains are not static, but trapped in long-lived metastable states [1]. Nonequilibrium effects, such as nonexponential relaxations and avalanches in the resistance observed in response to a change in temperature T or magnetic field H , are revealed only when the transition is approached from the charge-ordered phase. To isolate the effects of structure and charge order, we have performed similar measurements on $\text{La}_{1.7}\text{Eu}_{0.2}\text{Sr}_{0.1}\text{CuO}_4$, where CDW ordering at $T = T_{CO}$ does not coincide with the structural transition. We find that, in $H \parallel c$, both materials exhibit a similar onset of negative magnetoresistance near T_{CO} , thus attributing that behavior to the onset of charge order. Other similarities and differences in charge transport will also be discussed. [1] P. G. Baity *et al.*, arXiv:1609.02591v2 [cond-mat] (2016).

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