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Low-frequency Electronic Transport Noise in $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$ Nanowires¹ ADAM WEIS, YIZHOU XIN, DALE VAN HARLINGEN, University of Illinois at Urbana-Champaign — In the pseudogap regime, high temperature superconductors often exhibit electronic structure, such as charge stripes. Charge stripes pinned to disorder have been predicted to contribute to low-frequency resistance fluctuations when sample dimensions are comparable to the size of stripe domains (Carlson, 2006). We are extending our previous studies of resistance fluctuations in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ (Bonetti, 2004; Caplan, 2010) to thin films of La-based cuprates expected to have a more stable stripe phase, particularly in the regime near 1/8-filling. We present measurements of the low-frequency electronic transport in $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$ nanowires fabricated by pulsed laser deposition and lithographic techniques. We discuss temperature dependence of the power spectral density and its relevance to correlated electron phases above T_c .

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