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High energy scales in e-doped HTSCs observed with ARPES F. SCHMITT, B. MORITZ, S. JOHNSTON, E. M. MOTOYAMA, M. GREVEN, D. H. LU, R. G. MOORE, T. P. DEVEREAUX, Z.-X. SHEN, Stanford University, R. T. SCALETTAR, UC-Davis — The rich physics observed in the high temperature superconducting cuprates (HTSCs) arises from many interactions at different energy scales. While some interactions involving higher energy scales are captured by Mott physics, some of the lower energy pehenomena are captured better with more itinerant, mean-field type models. Since these different energy scales affect each other, it is challenging to assign origins to quasiparticle renormalizations observed by angle-resolved photoemission spectroscopy (ARPES). One of these features observed by ARPES, which involves a vertical drop in the band dispersion in the h-doped HTSCs at around 0.3eV, is usually termed high energy anomaly (HEA). We present new ARPES data on an e-doped HTSC, showing a similar HEA and will discuss its possible origin with the help of simulations of a single-band Mott-Hubbard model. Other experimental results also will be discussed.

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