Abstract Submitted
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Dynamical Spectral weight transfer in the cuprates is described by the Hubbard model PHILIP PHILLIPS, university of illinois, MARK JARRELL, Louisiana State University — Recently, Peets and colleagues [1] measured the x-ray intensity at the oxygen K-edge in overdoped $La_{2-x}Sr_xCuO_{4\pm\delta}$ (LSCO) and $Tl_2Ba_2CuO_{6+\delta}$. They concluded that, unlike the underdoped samples of LSCO and $YBa_2Cu_3O_x$ in which the integrated intensity increases at least linearly with doping, it saturates abruptly for a hole count exceeding $x_c \approx 0.23$. They interpreted the saturation as a breakdown of the 1-band Hubbard model in the cuprates. We analyse all the available data and show that they are completely described by the 1-band Hubbard model. The purported saturation is shown to occur at the doping level at which the dynamical contribution to the spectral weight turns off.

[1] D. C. Peets, Phys. Rev. Lett. **103**, 087402 (2009).

Philip Phillips
University of Illinois

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