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ARPES kink from strong electron correlations SHILADITYA CHAKRABORTY, DIMITRIOS GALANAKIS, PHILIP PHILLIPS, University of Illinois, Urbana- Champaign — Recent ARPES experiments have found a ‘kink’ in the energy dispersion (ω vs k) which has been attributed to electron-phonon interactions. In this study, we compute the energy dispersion defining the maximum in spectral function using the 2D Hubbard model to see if such kinks can be explained simply from strong correlations. To treat the strong correlations, we employ the cellular dynamical mean-field theory method and compute ω vs k for various hole dopings, temperatures and ratios of U/t . The computed dispersions show ‘kinks’ similar to those seen in ARPES experiments. The energy scale for the kink is t^2/U and arises from local spin correlations.

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