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Magnon Corrections to Cuprate Self Energy¹ ROBERT MARKIEWICZ, TANMOY DAS, ARUN BANSIL, Northeastern University — Recently, high energy kinks ('waterfalls') have been reported above 200 meV in the ARPES spectra of several cuprates. These kinks are a signal of bosonic coupling and may be responsible for the band renormalizations found at lower energies. We have shown that coupling to collective modes in the spin channel can yield waterfall-like effects in the electronic dispersion in the electron as well as hole doped cuprates. [1] Here we further explore the effects of the magnons in the pseudogap regime, including a discussion of how magnons influence optical properties.

[1] R.S. Markiewicz, S. Sahrakorpi, and A. Bansil, cond- mat/0701524, to be published, PRB.

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