

Abstract Submitted
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High Energy Kinks in the Cuprates¹ R.S. MARKIEWICZ, S. SAHRAKORPI, A. BANSIL, Northeastern University — Tunneling studies in conventional superconductors are well known to reveal details of the electron-phonon interaction responsible for pairing. Similar features—low energy kinks in the 40-70 meV range—have also been observed in the cuprates, but their origin and possible role in pairing have been hotly debated. Recently, even higher energy kinks above 200 meV have been reported in the ARPES spectra of several cuprates. In this connection we discuss the roles of electron-plasmon as well as electron-magnon effects and show that collective modes in the charge and spin channels in the cuprates yield band renormalizations at low energies and anomalous features in band dispersion at higher energies, which are in substantial accord with experimental results.

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