Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Modification of RIXS spectra of cuprates due to self energy and matrix element effects SUSMITA BASAK, TANMOY DAS, HSIN LIN, R. MARKIEWICZ, A. BANSIL, Northeastern University — We present a three-band Hubbard Hamiltonian and the associated Cu K-edge resonant inelastic x-ray scattering (RIXS) spectra for electron- and hole-doped cuprates over a wide range of energy and momentum transfers [1]. Intraband and interband excitations across the Fermi energy have been observed in several experiments [2]. We study the doping dependence of the Mott insulator phase transition using RIXS, in particular accounting for the roles of self energy and matrix element effects in modifying the spectra [3]. Work is supported in part by USDOE.

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Date submitted: 23 Nov 2009 Electronic form version 1.4