

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Self Energy Corrections to Resonant Inelastic X-ray Scattering in the Cuprates¹ WAEL AL-SAWAI, ROBERT MARKIEWICZ, ARUN BANSIL, Northeastern University — Resonant inelastic x-ray scattering (RIXS) is emerging as a powerful probe of strongly correlated systems by providing direct momentum-resolved information on charge excitations across the Mott gap. We have shown recently that long-range Coulomb interactions and self-energy corrections play an important role in modifying the electronic spectra of the cuprates.[1,2] Here we discuss model calculations to explore how plasmon and magnon corrections to the self-energy influence the RIXS spectra of the cuprates.

[1] R.S. Markiewicz and A. Bansil, Phys. Rev. **B75**, 020508 (R) (2007).

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

¹Work supported in part by the USDOE.

Wael Al-Sawai
Northeastern University

Date submitted: 18 Nov 2007

Electronic form version 1.4