

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Comparison between Resonant Inelastic X-Ray Scattering and the Dynamical Structure Factor** CHUNJING JIA, CHENG-CHIEN CHEN, BRIAN MORITZ, ADAM SORINI, THOMAS DEVEREAUX, Stanford/SLAC — Momentum dependent resonant inelastic X-ray scattering (RIXS) is an effective probe of many-body excitations. Theoretical and experimental work has shown that under certain circumstances RIXS can be viewed as an approximate probe of the dynamical structure factor  $S(q, \omega)$ . We perform cluster diagonalization combined with the bi-conjugate gradient stabilized method to model the RIXS spectra and  $S(q, \omega)$  for the single-band and multi-orbital Hubbard models. While these two cross sections share some similar features, there are significant quantitative differences, which highlight the qualitative distinction between these two probes.

Chunjing Jia  
Stanford/SLAC

Date submitted: 19 Nov 2010

Electronic form version 1.4