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Numerical study of resonant inelastic x-ray scattering for transition-metal complexes and oxides CHUNJING JIA, SLAC and Stanford, BRIAN MORITZ, SLAC, YAO WANG, Stanford University, THOMAS DEVEREAUX, SLAC and Stanford — Resonant inelastic x-ray scattering (RIXS) has become an important technique for understanding electronic transitions in transition-metal complexes and low-energy excitations in transition-metal oxides. A theoretical understanding of RIXS for such correlated systems has remained a challenge, especially for understanding momentum dependence and photon-polarization. Here we present exact diagonalization results for RIXS spectra at the Co K pre-edge for Co complexes to understand valence tautomerism. A more general method for calculating RIXS on transition metal oxides, which includes multiplet and charge-transfer effects, will also be discussed.

Chunjing Jia
SLAC and Stanford

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