Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Orbital Symmetry and Electron Correlation in Na_xCoO_2 W. B. WU, D. J. HUANG, J. OKAMOTO, H.-J. LIN, C.T. CHEN, National Synchrotron Radiation Research Center, Taiwan, A. TANAKA, Hiroshima University, Japan, F.C. CHOU, Massachusetts Institute of Technology, USA, A. FUJIMORI, University of Tokyo, Japan — Measurements of polarization-dependent soft x-ray absorption reveal that the electronic states determining the low-energy excitations of Na_xCoO_2 have predominantly a_{1g} symmetry with significant O $2p$ character. In contrast to the prediction of band theory, doping-dependent O $1s$ x-ray absorption shows a large transfer of spectral weight, providing spectral evidence for strong electron correlations of the layered cobaltates. We also found that Na_xCoO_2 exhibits a charge-transfer electronic character rather than a Mott-Hubbard character.

Di-Jing Huang
National Synchrotron Radiation Research Center

Date submitted: 30 Nov 2004 Electronic form version 1.4