Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Electronic dispersion in the CE charge/orbital-ordered phase of $LaSr_2Mn_2O_7$ revealed by ARPES ZHE SUN, QIANG WANG, University of Colorado at Boulder, ALEXEI V. FEDOROV, Advanced Light Source, Lawrence Berkeley National Laboratory, HONG ZHENG, JOHN F. MITCHELL, Materials Science Division, Argonne National Laboratory, DAN S. DESSAU, University of Colorado at Boulder — Using angle-resolved photoemission spectroscopy, we investigated the E vs. k dispersion of electrons in the CE charge/orbital-ordered phase of bi-layer manganite $LaSr_2Mn_2O_7$. We found that the Bloch band of hopping electrons is well maintained with a dispersion qualitatively different from various band calculations based on the zigzag chains in the CE phase. By comparing the dispersions and spectral weight in the CE-AFM, CE-PM and A-type AFM states, we reveal the strong influences of spin, charge, and orbital on electron hopping amplitudes.

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Date submitted: 28 Nov 2009 Electronic form version 1.4