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Doping Evolution of the Electronic Structure of Bilayer Colossal Magnetoresistive Manganites C. M. JOZWIAK, Department of Physics, UC Berkeley, G.-H. GWEON, Department of Physics, UC Berkeley, J. GRAF, Materials Science Division, Lawrence Berkeley National Laboratory, S.Y. ZHOU, Department of Physics, UC Berkeley, H. ZHENG, Materials Science Division, Argonne National Laboratory, J. F. MITCHELL, Materials Science Division, Argonne National Laboratory, A. LANZARA, Department of Physics, UC Berkeley and Materials Science Division, Lawrence Berkeley National Laboratory — Manganites have been the subject of great current interest not only because they exhibit the colossal magnetoresistance (CMR) effect, but also because they display a wide variety of magnetic properties and undergo several phase transitions from paramagnetic insulator (PMI) to ferromagnetic metals (FMM). Here we present a detailed momentum, doping and temperature dependent study of the electronic properties of bilayer manganites $La_{2-2x}Sr_{1+2x}Mn_2O_7$, by means of angle resolved photoemission spectroscopy. Differences and similarities between different doping are discussed. In particular we will address how the electronic structure evolves from the PMI to the FMM phase as well as the emergence of the CMR phase from the doping evolution.

C. M. Jozwiak
Department of Physics, UC Berkeley

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