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A Polaronic Picture of Bilayer Colossal Magnetoresistive Manganites in Angle Resolved Photoemission Spectroscopy C. JOZWIAK, G.-H. GWEON, Department of Physics, UC Berkeley, J. GRAFF, Materials Science Division, LBNL, S.Y. ZHOU, Department of Physics, UC Berkeley, H. ZHENG, J. F. MITCHELL, Material Sciences Division, ANL, A. LANZARA, Department of Physics, UC Berkeley and Material Sciences Division, LBNL — It is becoming generally recognized that the presence of a strong electron-lattice interaction, in the limit of polaronic coupling, is a common feature to transition metal oxides such as cuprate superconductors and colossal magnetoresistive manganites. Angle resolved photoemission spectroscopy (ARPES) is the ideal tool to address and gain insight on the polaronic nature of the electron-lattice interaction through a direct study of the ARPES single particle spectral function. Here we present a detailed momentum dependent study of the ARPES single particle spectral function in double layer manganites $La_{1.2}Sr_{1.8}Mn_2O_7$,and Bi2212 and LSCO cuprates. A direct comparison between the two classes of materials and the peculiar momentum dependence of the ARPES lineshapes, also known as nodal-antinodal dichotomy, will be discussed in terms of a polaronic picture.

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