

Abstract Submitted
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Doping dependent charge correlation in electron-doped cuprates.

EDUARDO DA SILVA NETO, F. BOSCHINI, M. ZONNO, G. A. SAWATZKY, A. DAMASCELLI, Univ of British Columbia, M. MINOLA, M. BLUSCHKE, M. LE TACON, B. KEIMER, Max Planck Institute for Solid State Research, B. WU, Y. LI, G. YU, M. GREVEN, University of Minnesota, J. HIGGINS, Y. JIANG, R. L. GREENE, University of Maryland, R. SUTARTO, F. HE, Canadian Light Source, E. SCHIERLE, E. WESCHKE, Helmholtz-Zentrum Berlin — We use resonant x-ray scattering to measure the charge order in electron-doped high-T_c superconductors and its relationship to antiferromagnetism and superconductivity. First, we establish the presence of charge order in a second family of electron-doped cuprates, LCCO thin films, with similar characteristics to previous observations in NCCO [1]. Second, doping and temperature dependent measurements of NCCO single crystals show that charge order is present in the $x = 0.059$ to 0.166 doping range, and its doping-dependent wavevector is consistent with the separation between the hot spots on the Fermi surface. For NCCO samples near optimal doping ($x = 0.14$) the charge order remains constant through the superconducting transition temperature and we find that magnetic fields up to 6 T have a negligible effect on its intensity. The implications of our data to the connections of charge order to antiferromagnetism and superconductivity will be discussed. [1] E. H. da Silva Neto, et al. Science 347, 282 (2015).

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