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ARPES study of doping dependence of the superconducting gap in $\mathbf{Ba_{1-x}K_xFe_2As_2}$ Y.-M. XU, M. NEUPANE, Department of Physics, Boston College, P. RICHARD, WPI Research Center, Advanced Institute for Material Research, Tohoku University, K. NAKAYAMA, Y. SEKIBA, Department of Physics, Tohoku University, T. QIAN, S. SOUMA, WPI Research Center, Advanced Institute for Material Research, Tohoku University, T. SATO, T. TAKAHASHI, Department of Physics, Tohoku University, H.-H. WEN, Beijing National Laboratory for Condensed Matter Physics, and Institute of Physics, Chinese Academy of Sciences, Z. WANG, Department of Physics, Boston College, H. DING, Beijing National Laboratory for Condensed Matter Physics, and Institute of Physics, Chinese Academy of Sciences — High transition temperature superconductivity has been discovered recently in many doped iron pnictides which join the cuprates in the family of high-Tc superconductors. It is very important to understand the nature of the superconducting gap and its doping dependence, as in the case of the cuprates, in order to understand this new class of superconductors. A systematic angle-resolved photoemission spectroscopy (ARPES) study has been performed on the iron pnictide $Ba_{1-x}K_xFe_2As_2$ at different K concentrations, to determine its doping dependence of the superconducting gap. We will report our ARPES results and their implications.

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