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Fermi surface and superconducting gap of $Ba_{1-x}K_xFe_2As_2$ studied by high-resolution ARPES K. NAKAYAMA, T. SATO, Y. SEKIBA, Tohoku University, P. RICHARD, S. SOUMA, WPI, Tohoku University, M. NEUPANE, Y.-M. XU, Z. WANG, Boston College, X. DAI, Z. FANG, G. F. CHEN, J. L. LUO, N. L. WANG, H. DING, Chinese Academy of Sciences, T. TAKAHASHI, WPI, Tohoku University — The electronic states near the Fermi level are the key ingredient to understand the superconducting mechanism of iron-based superconductor. Although electrons in the iron orbitals have been found to play a key role to the occurrence of the superconductivity, the microscopic origin of high-T_c superconductivity is still unclear. To address this important issue, we report our recent high-resolution ARPES results on hole-doped $Ba_{1-x}K_xFe_2As_2$, and demonstrate the Fermi-surface-sheet and momentum dependence of the superconducting gap as well as the doping evolution of the Fermi surface and band structure.

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