Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

ARPES of K-doped iron selenide superconductor TAKAYOSHI YOKOYA, MASANORI SUNAGAWA, KENSEI TERASHIMA, TAKAHIRO HAMADA, HIROKAZU FUJIWARA, Okayama University, MASASHI TANAKA, HIROYUKI TAKEYA, YOSHIHIKO TAKANO, NIMS, MASASHI ARITA, KENYA SHIMADA, HIROFUMI NAMATAME, MASAKI TANIGUCHI, HiSOR, Hiroshima University, KATSUHIRO SUZUKI, HIDETOMO USUI, KAZUHIKO KUROKI, Osaka University, TAKANORI WAKITA, YUJI MURAOKA, Okayama University — In iron pnictide superconductors, the characteristic Fermi surface(FS) topology, namely nesting of hole-like FS at the zone center and electron-like FS at the zone corner, is considered to induce spin/orbital fluctuation leading to high-Tc superconductivity [1,2]. In K-doped iron selenide superconductors, however, ARPES studies reported absence of hole-like FS at the zone center, which is different from that observed in iron pnictides [3]. So far, proposed models for the superconductivity based on the FS topology appear to fail to explain available experimental results. In this talk, we present our recent ARPES studies on a K-doped iron selenide superconductor performed with careful tuning of experimental conditions, which show a hole-like FS around the zone center. [1] I. I. Mazin et al., Phys. Rev. Lett. 101, 057003 (2008); K. Kuroki et al., Phys. Rev. Lett. 101, 087004 (2008). [2] H. Kontani et al., Phys. Rev. Lett. 104, 157011 (2010). [3] Y. Zhang et al., Nat. Mater. 10, 273 (2011); T. Qian et al., Phys. Rev. Lett. 106, 187001 (2011).

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Date submitted: 17 Nov 2014 Electronic form version 1.4