Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

ARPES Study on Layer-Dependent Electronic Structure of FeSe/SrTiO3 Films DEFA LIU, LIN ZHAO, XU LIU, SHAOLONG HE, YONG HU, JUNFENG HE, Chinese Academy of Sci (CAS), WENHAO ZHANG, Tsinghua university, FANGSEN LI, Chinese Academy of Sci (CAS), CHENJIA TANG, Tsinghua university, ZHI LI, LILI WANG, GUODONG LIU, JUN ZHANG, CHUANGTIAN CHEN, ZUYAN XU, Chinese Academy of Sci (CAS), XI CHEN, Tsinghua university, XUCUN MA, Chinese Academy of Sci (CAS), QIKUN XUE, Tsinghua university, XINGJIANG ZHOU, Chinese Academy of Sci (CAS) — the recent discover of high-Tc superconductivity in a single-layer FeSe/SrTiO3 film has attracted much attention.. Our previous ARPES studies on the FeSe/SrTiO3 films have observeddistinct electronic structure of the single-layer FeSe/SrTiO3 film, established a phase diagram and observed a signature of high Tc over 65K in the annealed single-layer FeSe/SrTiO3 films, revealed thedichotomy of electronic structure and superconductivity between the single-layer and double-layer FeSe/SrTiO3 films, and observed an insulator-superconductor transition in the single-layer FeSe/SrTiO3 films. In this talk, we will present our new ARPES results on the FeSe/SrTiO3 films with many different layers, from single-layer up to 50-layers. This systematic study will provide insight in understanding the evolution of electronic structure and superconductivity from the single-layer FeSe film, to multiple-layer FeSe film and eventually to the bulk FeSe superconductor.

Defa Liu
Chinese Academy of Sci (CAS)

Date submitted: 10 Nov 2014 Electronic form version 1.4