## New Fermi Surface Sheets Revealed in Sr<sub>2</sub>RuO<sub>4</sub> Revealed by High Resolution Angle-Resolved Photoemission Spectroscopy

**Shanyu Liu**<sup>a</sup>, Wentao Zhang<sup>a</sup>, Haiyun Liu<sup>a</sup>, Lin Zhao<sup>a</sup>, Xiaowen Jia<sup>a</sup>, Daixiang Mou<sup>a</sup>, Guodong Liu<sup>a</sup>, Xiaoli Dong<sup>a</sup>, Jun Zhang<sup>a</sup>, Xiaoyang Wang<sup>b</sup>, Qinjun Peng<sup>b</sup>, Zhimin Wang<sup>b</sup>, Shenjin Zhang<sup>b</sup>, Feng Wang<sup>b</sup>, Z. Q. Mao<sup>c</sup>, Chuangtian Chen<sup>b</sup>, Zuyan Xu<sup>b</sup>, and X. J. Zhou<sup>a</sup>

<sup>a</sup>National Laboratory for Superconductivity, Institute of Physics and Beijing National Laboratory for Condensed Matter Physics, Chinese Academy of Sciences, Beijing 100080, China <sup>b</sup>Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100080, China <sup>c</sup>Department Of Physics, Tulane University, New Orleans, Louisiana 70118, USA

We will present our detailed Fermi surface measurements on  $Sr_2RuO_4$  by high resolution angle-resolved photoemission spectroscopy (ARPES) including vacuum ultra-violet (VUV) laser-based ARPES. In addition to the three sets of Fermi surface sheets originating from the bulk bands, the surface bands and the shadow bands of the surface bands, we have revealed two new Fermi surface sheets. The origin of these new Fermi surface sheets will be discussed.