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VUV Laser-Based ARPES on Electronic Structure of High Temperature Superconductors XINGJIANG ZHOU, GUODONG LIU, WENTAO ZHANG, HAIYUN LIU, LIN ZHAO, JIANQIAO MENG, XIAOLI DONG, National Laboratory for Superconductivity, Institute of Physics, Chinese Academy of Sciences, Beijing 100080, China, Z.Y. XU, G.L. WANG, H.B. ZHANG, Y. ZHOU, Key Laboratory of Optical Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100080, China, C.T. CHEN, Y. ZHU, G.C. ZHANG, X.H. WEN, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100080, China, G.D. GU, Physics Department, Brookhaven National Laboratory, Upton, New York 11973 — The last decade has witnessed a dramatic improvement of the angle-resolved photoemission spectroscopy (ARPES) technique in terms of energy and momentum resolution. This in turn has resulted in a number of new findings on the electronic structure of high-Tc cuprate superconductors, particularly the identification of many-body effects. In this talk, we will present results on the electronic structure of high-Tc superconductors measured from our new ARPES system based on VUV laser, realized by frequency doubling from a non-linear optical crystal KBBF. The laser-based ARPES system has ultra-high energy resolution, high photon flux, and a potential to enhance bulk sensitivity.

Xingjiang Zhou
National Laboratory for Superconductivity, Institute of Physics
Chinese Academy of Sciences, Beijing 100080, China

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