

Abstract Submitted  
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**Superconducting Gap and Pseudogap in Heavily Underdoped Bi2212** CHENG HU, LIN ZHAO, SHAOLONG HE, GUODONG LIU, LI YU, CHUANGTIAN CHEN, ZUYAN XU, GENDA GU, XINGJIANG ZHOU, Chinese Academy of Sci (CAS) — The relationship between the pseudogap and superconducting gap in high temperature cuprate superconductors remains an outstanding issue. In this talk, we will present laser-based angle-resolved photoemission spectroscopy results on underdoped Bi<sub>2</sub>Sr<sub>2</sub>(Ca,Dy)Cu<sub>2</sub>O<sub>8</sub> high temperature superconductor. The latest generation of ARPES system equipped with the narrow-bandwidth VUV laser and the time-of-flight (TOF) electron energy analyzer is utilized here, which enables us to have super-high energy resolution, high momentum resolution, and simultaneous coverage of two-dimensional momentum space. From detailed temperature dependence near the nodal and antinodal regions, we will discuss the relationship between the pseudogap and superconducting gap in the underdoped cuprate superconductors.

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