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APRES study of the $Bi_2Sr_2Ca_2Cu_3O_{10}$ and $HgBa_2CuO_4$ WEI-SHENG LEE, Department of Physics, Stanford University, DONGHUI LU, Stanford Synchrontron Radiation Laboratory, WANLI YANG, XINGJIANG ZHOU, Advanced Light Source, Lawrence Berkeley Lab, KYLE M. SHEN, GUICHUAN YU, Department of Physics, Stanford University, MARTIN GREVEN, Department of Applied Physics, Stanford University, CHENGTIAN LIN, Max-Plank Institute, German, JUN-ICHI SHIMOYAMA, Department of Applied Chemistry, University of Tokyo, Japan, ZHI-XUN SHEN, Department of Physics, Stanford University —
The wide variation of the critical temperature of the high Tc superconductors is an important unresolved issue. For example, the optimal Tc of the mercury-based superconductor is 97 K, while that of the lanthanum-based superconductor is only 38K. In this study, we used the Angle Resolved Photoemission Spectroscopy (ARPES) to explore the electronic state of the Bi2223 (Tc = 110K) and Hg1201 (Tc = 94K) system; both of them have a very high Tc compared to other high Tc superconductors. Comparisons of their electronic structures to other high Tc superconductors with lower critical temperature will discussed.

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