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Detecting the minimum gap locus in ARPES spectra of Bi2201¹ MAKOTO HASHIMOTO, SSRL, SLAC National Accelerator Lab, RUIHUA HE, Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, ROB MOORE, SIMES, SLAC and GLAM, Departments of Physics and Applied Physics, Stanford University, DONGHUI LU, SSRL, SLAC National Accelerator Lab, YOSHIYUKI YOSHIDA, Nanoelectronics Research Institute, AIST, MOTOYUKI ISHIKADO, Japan Atomic Energy Agency, HIROSHI EISAKI, Nanoelectronics Research Institute, AIST, ZAHID HUSSAIN, Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, TOM DEVEREAUX, ZHI-XUN SHEN, SIMES, SLAC and GLAM, Departments of Physics and Applied Physics, Stanford University — Recent angle-resolved photoemission (ARPES) studies have reported a direct evidence for the competing nature of the pseudogap by showing that the pseudogap dispersion is not tied to Fermi momentum (k_F)[1,2]. In this study, to get more detailed information on how the competing pseudogap evolves across the pseudogap temperature (T^*), we introduce a new analysis method for spectral weight. We found a clear indication that the pseudogap opens at T^* with the minimum gap locus deviating from k_F , which is completely different manner from the gap opening by simple superconductivity, and strongly supports that the pseudogap is another distinct order. [1] M. Hashimoto and R.-H. He *et al.*, Nature Phys. **6**, 14-418 (2010). [2] R.-H. He and M. Hashimoto *et al.*, Science **331**, 1579-1583 (2011).

Prefer Oral Session
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