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Temperature dependent ARPES study of the pseudogap of Pb-Bi2201 MAKOTO HASHIMOTO, RUIHUA HE, Stanford, KIYOHISA TANAKA, JEAN-PIERRE TESTAUD, Stanford/LBL, WORAWAT MEEVASANA, ROB MOORE, DONGHUI LU, Stanford, YOSHIYUKI YOSHIDA, HIROSHI EISAKI, AIST, ZAHID HUSSAIN, LBL, ZHI-XUN SHEN, Stanford — The pseudogap phenomena in the high-Tc cuprates have been extensively studied because of possible intimate connection with the unknown mechanism of superconductivity. We have studied the ARPES spectra of optimally-doped Pb-Bi2201 (Tc = 34 K) at SSRL BL5-4, from the superconducting state (10 K) to the normal state above the pseudogap temperature (160 K). We have revealed how the band structure changes with the pseudogap opening, and found that the superconducting gap alone cannot explain the ARPES spectra in the antinodal region. Based on the results, in the presentation, we would like to discuss possible origins of the pseudogap. This work is supported by the DOE Office of Basic Energy Science, Division of Materials Science and Engineering. ARPES experiments were performed at the Stanford Synchrotron Radiation Laboratory (SSRL), which is operated by the Department of Energy Office of Basic Energy Science.

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