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Temperature dependent ARPES study of the superconducting gap in overdoped Bi2212[1] H.-B. YANG, CMPMSD, Brookhaven National Laboratory, J.D. RAMEAU, CMPMSD, Brookhaven National Laboratory/Stonybrook University, G.D. GU, P.D. JOHNSON, CMPMSD, Brookhaven National Laboratory — High-resolution angle-resolved photoemission (ARPES) is used to probe the temperature dependence of the superconducting gap around the Fermi surface in overdoped Bi2212. Lucy-Richardson deconvolution is applied to reduce the error from experimental resolution. Normalizing by the Fermi function then allows the observation of the true gap in the spectral function. Numerical simulation is also used to compare the experimental results with theoretical models. We have investigated the temperature dependence of the gap around the nodal region and the anti-nodal region, with temperature going from the superconducting state into the normal state.

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