Fine Details of the Electronic Excitations in the Near-Nodal Region of the Fermi Surface in Bi 2212

T. VALLA, T.E. KIDD, J. RAMEAU, P.D. JOHNSON, G.D. GU, Brookhaven National Lab — Recent high resolution ARPES experiments on high quality Bi$_2$Sr$_2$CaCu$_2$O$_{8+\delta}$ samples have uncovered extremely coherent excitations in the near-nodal region of the Fermi surface. The width of these excitations at low energies and at low temperature seems to be essentially resolution limited. This observation has enabled a more detailed insight into the intrinsic properties of these excitations. Some of the “fine features” that have not been previously resolved, will be discussed. This work was supported by the DOE under contract number DE-AC02-98CH10886.

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Date submitted: 11 Jan 2005   Electronic form version 1.4