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Temperature dependence of the nodal quasiparticle in the cuprates high temperature superconductors using laser based angle resolved photoemission JEFF GRAF, Lawrence Berkeley National Lab, C. JOZWIAK, C. SMALLWOOD, H. EISAKI, R.A. KAINDL, D.-H. LEE, A. LANZARA — We used ultra high resolution laser based angle resolved photoemission (ARPES) to study the temperature dependence of the electronic structure of double layer $Bi_2Sr_2CaCuO_{8+\delta}$ at optimal doping (Tc=91K) along the nodal direction. Our study reveals fine details of the nodal quasiparticle spectral function as a function of temperature. The results are discussed in terms the electron-lattice and electron-electron interaction in these materials.

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