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Unusual spectral weight transfer in high temperature Bi-superconductors JEFF GRAF, Materials Sciences Division, Lawrence Berkeley National Laboratory, California 94720, GEY-HONG GWEON, MSD, Lawrence Berkeley National Laboratory, CA 94720; Department of Physics, UC Berkeley, CA 94720, SHUYUN ZHOU, Department of Physics, UC Berkeley, CA 94720, ELI ROTENBERG, Advanced Light Source, Lawrence Berkeley National Laboratory, CA 94720, HIROSHI EISAKI, Electrotechnical Laboratory, Tsukuba Japan, ALESSANDRA LANZARA, MSD, Lawrence Berkeley National Laboratory, CA 94720; Department of Physics, UC Berkeley, CA 94720 — High resolution angle resolved photoemission spectroscopy (ARPES) studies of the electronic structure of single layer ($Bi_2Sr_2CuO_{6+\delta}$) and double layer ($Bi_2Sr_2CaCuO_{8+\delta}$) Bi-compound are reported. A detailed study of the quasiparticle spectral function as a function of momentum, temperature and doping is presented. Unusual spectral weight transfer is observed in both systems and discussed in terms of a strong interplay between the electron-lattice and electron-electron interaction in these materials.

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