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The single-particle self-energy and fluctuation spectrum of slightly underdoped Bi2212 from ARPES experiment JIN MO BOK, JAE HYUN YUN, HAN-YONG CHOI, SungKyunKwan Univ., WENTAO ZHANG, X.J. ZHOU, Chinese Academy of Sciences, CHANDRA M. VARMA, University of California, SUNGKYUNKWAN UNIV. TEAM, CHINESE ACADEMY OF SCIENCES TEAM, UNIVERSITY OF CALIFORNIA TEAM — We extract the single particle self-energy $\Sigma(\theta,\omega)$ and Eliashberg function $\alpha^2F(\theta,\omega)$ of normal and superconducting state Bi2212 from ARPES experiments. The self-energies along the cuts at tilt angle θ were extracted by fitting ARPES momentum distribution curves. Then, using the extracted self-energy as input, the Eliashberg function is deduced by inverting the d- wave Eliashberg equation employing the adaptive maximum entropy method (MEM). The momentum dependence of self-energy was decomposed in terms of $\Sigma(\theta,\omega) = \Sigma_0(\omega) + \Sigma_4(\omega)cos4\theta$ at 16, 70, 80, 97, and 107 K. We will present the temperature evolution and momentum dependence of the deduced Eliashberg function and self-energy.

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