Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Laser-ARPES studies of dispersion kinks in cuprate phase diagram I.M. VISHIK, Stanford University, M. HASHIMOTO, Stanford Synchrotron Radiation Lightsource, S. JOHNSTON, IFW Dresden, W.-S. LEE, F. SCHMITT, R.G. MOORE, Stanford Institute for Materials and Energy Sciences, D.H. LU, Stanford Synchrotron Radiation Lightsource, T. SASAGAWA, Tokyo Institute of Technology, S. UCHIDA, S. ISHIDA, University of Tokyo, K. FUJITA, Cornell University, M. ISHIKADO, Japan Atomic Energy Agency, Y. YOSHIDA, H. EISAKI, National Institute of Advanced Industrial Science and Technology, Japan, R.-H. HE, Boston College, Z. HUSSAIN, Lawrence Berkeley National Laboratory, T.P. DEVEREAUX, Z.-X. SHEN, Stanford Institute for Materials and Energy Sciences —
Angle-resolved photoemission spectroscopy (ARPES) reveals ubiquitous dispersion kinks in cuprates which are manifestations of electron-boson coupling, potentially related to the superconductivity pairing mechanism. We report new temperature-, momentum-, and doping- dependent laser-ARPES measurements of the energy and coupling strength of the ubiquitous kink near 70 meV in $Bi_2Sr_2CaCu_2O_{8+\delta}$ (Bi-2212). The apparent kink energy below T_c is related to the mode energy modulo the maximum of the *d*-wave superconducting gap, and the pseudogap similarly needs to be considered above T_c. Following improvements in data quality as well as recent comprehensive gap measurements throughout the phase diagram, we can better assess the phenomenology and origin of dispersion anomalies.

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Date submitted: 27 Dec 2012 Electronic form version 1.4