

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Evidence from Laser ARPES of Electron-Optical Phonon Coupling Near the Node of Optimally Doped Bi2212**<sup>1</sup> JONATHAN RAMEAU, HONGBO YANG, PETER JOHNSON, Brookhaven National Lab — Laser based photoemission with photons of energy 6 eV is used to examine the fine details of the very low energy electron dispersion and associated dynamics in the nodal region of optimally doped Bi2212. A “kink” in the dispersion in the immediate vicinity of the Fermi energy is associated with scattering from an optical phonon previously identified in Raman studies. The identification of this phonon as the appropriate mode is confirmed by comparing the scattering rates observed experimentally with the results of calculated scattering rates based on the properties of the phonon mode as well as the mode’s observed dispersion with respect to Fermi surface angle at low temperature.

<sup>1</sup>This work was supported by the Department of Energy, Basic Energy Science

Jonathan Rameau  
Brookhaven National Lab

Date submitted: 19 Nov 2009

Electronic form version 1.4