Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Angle-Resolved photoemission spectroscopy on $Tl_2Ba_2CuO_{6+\delta}$ G. LEVY, M. RAICHLE, D. FOURNIER, J. MOTTERSHEAD, C. VEENSTRA, Physics and Astronomy department, University of British Columbia, 2355 East Mall, V6R 1Z4 Vancouver, Canada., J. ROSEN, jrosen.bc@gmail.com, A. BOSTWICK, E. ROTENBERG, Advanced Light Source Lawrence Berkeley National Laboratory Berkeley, CA 94720 U.S., R. LIANG, W. HARDY, D. BONN, A. DAMASCELLI, Physics and Astronomy department, University of British Columbia, 2355 East Mall, V6R 1Z4 Vancouver, Canada. — Tl2201 is characterized by a simple and undistorted crystal structure, as well as less disorder than other high-T_c cuprate-based materials. On the very overdoped side of the phase diagram, a remarkable agreement has already been achieved between transport (i.e., AMRO and dHvA) and ARPES studies [1 – 3]. We here will present ARPES data on high-quality Tl2201 single crystals and compare them with transport results from the same material across the phase diagram, with emphasis on the evolution of Fermi surface volume, Fermi velocity, and many-body renormalization. We will also discuss the possibility of driving the doping on this material into the underdoped regime by in-situ potassium evaporation.

[1] N. E. Hussey *et al.*, Nature 425, 814 (2003).
[2] M. Platé *et al.*, Phys. Rev. Lett. 95, 077001 (2005).
[3] B. Vignolle *et al.*, Nature 455, 952 (2008).

Giorgio Levy
Physics and Astronomy department, University of British Columbia,
2355 East Mall, V6R 1Z4 Vancouver, Canada.

Date submitted: 16 Dec 2009 Electronic form version 1.4