

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Particle-Hole Asymmetry in Doped Mott Insulators: Implications for Tunneling and Photoemission Spectroscopies MOHIT RANDE-
RIA, Physics Department, Ohio State University, RAJDEEP SENSARMA, Tata
Institute of Fundamental Research, India, NANDINI TRIVEDI, Physics Depart-
ment, Ohio State University, FU-CHUN ZHANG, University of Hong Kong and
University of Cincinnati — In a system with strong local repulsive interactions it
should be more difficult to add an electron than to extract one. We make this idea
precise by deriving various exact sum rules for the one-particle spectral function in-
dependent of the details of the Hamiltonian describing the system and of the nature
of the ground state. We extend these results using a variational ansatz for the su-
perconducting ground state and low lying excitations. Our results shed light on the
striking asymmetry in the tunneling spectra of high T_c superconductors and should
also be useful in estimating the local doping variations in inhomogeneous materials.

Mohit Randeria
Ohio State University

Date submitted: 01 Dec 2004

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