

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Bands, spin fluctuations and traces of Fermi surfaces in ARPES intensities on high- T_C cuprates THOMAS JARLBORG, DPMC, University of Geneva, CH1211 Geneva 4, Switzerland — The band structures of pure and hole doped La_2CuO_4 with anti-ferro magnetic (AFM) spin-fluctuations are calculated and compared to spectral weights of ARPES. It is shown that the observation of coexisting Fermi surface (FS) arcs and closed FS pockets are consistent with antiferromagnetic spin fluctuations of varying wave lengths. The FS signal of the underlying non-magnetic material is mixed with echos of FS-breaks from domains with AFM spin waves. Large variations of strong spin fluctuations make the outer part of the FS break diffuse at low doping. This part of the FS is suppressed at high doping when spin fluctuations becomes weak. The resulting superimposed spectral weight has features both from FS arcs and closed pockets. This makes a connection between results of ARPES and neutron scattering, and it implies that spin-phonon coupling is an important mechanism for cuprate properties.

Thomas Jarlborg
DPMC, University of Geneva, CH1211 Geneva 4

Date submitted: 14 Dec 2010

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