

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Spin susceptibility of underdoped cuprates: the case of Ortho-II $\text{YBa}_2\text{Cu}_3\text{O}_{6.5}$ ELENA BASCONES, Instituto de Ciencia de Materiales de Madrid (CSIC) and Theoretische Physik, ETH-Zurich, T. MAURICE RICE, Theoretische Physik, ETH-Zurich — Recent inelastic neutron scattering measurements found that the spin susceptibility of detwinned and highly ordered ortho-II $\text{YBa}_2\text{Cu}_3\text{O}_{6.5}$ exhibits, in both the normal and superconducting states, one-dimensional incommensurate modulations at low energies which were interpreted as a signature of dynamic stripes. We propose an alternative model based on quasiparticle transitions between the arcs of a truncated Fermi surface. Such transitions are resonantly enhanced by scattering to the triplet spin resonance. We show that the anisotropy in the experimental spin response is consistent with this model if the gap at the saddle points is anisotropic.

T. Maurice Rice
ETH-Zurich

Date submitted: 29 Nov 2005

Electronic form version 1.4