

SFB 608

Einladung zum Kolloquium

Ort: Universität zu Köln
II. Physikalisches Institut, Seminarraum 201

Zeit: Mittwoch, den 19. Februar 2003, 15 Uhr c.t.

Sprecher: Dr. Carsten Honerkamp,
MIT

Thema: Staggered flux fluctuations and the superconducting state
in the gauge theory for the high- T_c cuprates

We describe fluctuations in the superconducting state of the $SU(2)$ meanfield theory for 2D t - J -model. The dominant contribution is given by staggered flux (SF) fluctuations which are shown to have profound effects on the electron spectral function. The quasiparticle peaks at the saddle points get strongly broadened by the SF fluctuations. In contrast with that the peaks near the nodes of the d -wave gap are preserved. The strength of these effects is governed by an energy scale that decreases towards zero doping and that is related to the energy splitting between the $SU(2)$ -related superconducting and staggered flux meanfield states. Furthermore we discuss the possible role of SF fluctuations in the superconducting transition.

gez. Goetz Uhrig