Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Nonanalytic Magnetic Response of Fermi- and non-Fermi Liquids

ANDREY CHUBUKOV, University of Wisconsin, DMITRII MASLOV, RONOJOY SAHA, University of Florida — We revisit the issue of the non-analytic dependence of the static spin susceptibility of a 2D Fermi liquid on temperature and a magnetic field, $\chi_s(T,H) = \chi_0 + AT f_\chi(\mu_B|H|/T)$. We show that in a generic Fermi liquid the prefactor A is expressed via complex combinations of the Landau parameters, and does not reduce to the backscattering amplitude, contrary to the case of the specific heat $C(T,H)$. We show that this distinction with the specific heat is mostly relevant near a ferromagnetic QCP – the non-analytic terms in $\chi_s(T,H)$ are less singular near QCP than those in $C(T,H)$.

Andrey Chubukov
University of Wisconsin

Date submitted: 19 Nov 2006 Electronic form version 1.4