MAGNETISM AND SUPERCONDUCTIVITY IN HEAVY FERMION SYSTEMS

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9.7 cm

The link between magnetic quantum critical point (QCP) and so called non Fermi liquid properties in different heavy Fermion systems are discussed. Special focus will be given on transport properties and on the description by spin fluctuation theory. The relaxation with the appearance of superconductivity will be also adressed. The recent observation of the superconductivity of UPd_2Al_3 in the dynamical susceptibility will be discussed and compared with recent tunneling results. With the case of the unconventionnal superconductor UPt_3, we will demonstrate the appereance of new phenomena in thermal conductivity, flux flow resistivity, anisotropy of the critical current. Finally, measurements of the upper critical fields in different heavy fermion superconductors will be reported and used for the choice of the order parameter or the possible existence of Fulde Ferrel Larkin Ovchinnikov phase.

13.4 cm

Subject category :

1. Correlated Electrons and High Temperature Superconductors

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