

Séminaire du SPEC

Mercredi 6 décembre 2006, 11h00

Bt. 774 - Salle Claude ITZYKSON
Centre d'Etudes de Saclay, Orme des Merisiers
91191 Gif-sur-Yvette

Interplay of paramagnetic, orbital and impurity effects on the phase transition of a normal metal to superconducting state

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Within the mean field theory for conventional and unconventional singlet superconductors in the presence of paramagnetic, orbital and impurity effects there were established the criterions for appearance of the non uniform (Abrikosov plus Fulde-Ferrell-Larkin-Ovchinnikov) superconducting state and the change of the order of transition from normal to superconducting state. We find that the superconducting phase diagram is very sensitive to geometrical effects such as the nature of the order parameter and the shape of the Fermi surface. In particular, we obtain the qualitative phase diagrams for three-dimensional isotropic s-wave superconductor and in quasi-two-dimensional d-wave superconductor under magnetic field perpendicular to the conducting layers.

Invitant :

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