Quantum Phase Transition at Critical Magnetic Field

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Since the exchange interaction between the localized 4f moments in the rare earth compounds is usually mediated by conduction electrons, the on-site and inter-site exchange can be affected the character of c.e. The strength of both on-site and inter-site exchange is strongly depends on the number or nearest neighbour magnetic ions and the inter-atomic space defined be correlation length Rc=2kfRij (which is manifested by the metamagnetic character). Even though the strength of onsite exchange which tend to screen away the spin of magnetic ion resulted to competition of onsite and intersite exchange, the existence of the phenomena on the Gd-IMC is a puzzle. In spite of the above phenomena the related character of Tk>< TN the effects of magnetic field on the field induced of metamagnetic character which is much smaller than the broken Kondo temperature ,is investigated. A critical quantum phase transition is manifested at a critical external magnetic field at which the unstable of F.M phase transition collapse to completely P.M with Kondo lattice behaviour .

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