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MULTIPLE QUANTUM CRITICAL POINTS IN CE 3 PTIN 11

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The properties of the heavy fermion compound Ce 3 PtIn 11 are rather enigmatic. Not only the compound possesses two inequivalent Ce-sites but at ambient pressure it exhibits two successive antiferromagnetic (AFM) transitions at T 1 = 2.2K and T N = 2K, respectively [1]. Upon further cooling superconductivity is found with T c = 0.32K. Entropy analysis conjectured the idea that the Ce2-ions are responsible for the magnetic ordering whereas the second Ce1-ions evokes superconductivity. Here we present our recent 115 In NMR/NQR and specific heat results. From these we infer that Ce 3 PtIn 11 possibly harbors two quantum critical points (QCP) i.e., zero temperature phase transtitions –one close to/or at ambient pressure [2] and one to be reached by an applied hydrostatic pressure of p c = 1.5GPa [1]. Each QCP can be associated with a particular Ce-site. The critical magnetic fluctuations accompanying the QCPs are at the origin of Cooper-pairing.
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