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Spin fluctuations and quantum criticality in a CePt ferromagnetic Kondo lattice JULIO LARREA J., M.B. FONTES, E. BAGGIO-SAITOVITCH, Centro Brasileiro de Pesquisas Físicas, Brazil, A. EICHER, Technical University of Braunschwaig, Germany, M. CONTINENTINO, Instituto de Física, Universidade Federal Fluminense, Brazil — We report on an study of the quantum critical behavior of a ferromagnetic (FM) CePt Kondo lattice using ac susceptibility (χ_{ac}) and electrical resistance ($R(T)$) measurements under high pressures ($P \leq 15$ GPa). Our results shows that the FM ordering disappears at the critical pressure $P_C \sim 12.1$ GPa, which is seen as a vanishing of the Curie temperature (T_C) and the anisotropic FM magnons (Δ). This P_C is taken as a quantum critical point (QCP) and separates the FM ordering from paramagnetic (PM) state at zero temperature. In the vicinity of P_C, a non Fermi liquid behavior (NFL) is observed in the $R(T)$ data as a temperature dependence $T^{1.3}$, which is ascribed to the FM-QCP transition. Beyond the QCP, the system recovers the truly Fermi liquid (FL) behavior. For our knowledge, CePt is the only Ce Kondo lattice that shows a direct FM-QCP transition [1]. Our analysis of the $R(T)$ data, using scaling relations and a spin wave scenario, suggest that the two dimensional FM spin fluctuations is the mechanism to accounts for this ferromagnetic instability. [1] J. Larrea J. et al, Phys. Rev. B 72, 035129 (2005).

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