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Low temperature properties of the electron spin resonance in YbRh₂Si₂

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Abstract

We present the field and temperature behavior of the narrow electron spin resonance (ESR) response in YbRh₂Si₂ well below the single ion Kondo temperature. The ESR g-factor reflects a Kondo-like field and temperature evolution of the Yb* magnetism. Measurements toward low temperatures (> 0.5 K) have shown distinct crossover anomalies of the ESR parameters upon approaching the regime of a well-defined heavy Fermi liquid. Comparison with the field dependence of specific heat and electrical resistivity reveal that the ESR parameters can be related to quasiparticle mass and cross section and, hence, contain inherent heavy electron properties. © 2010 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

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