Abstract Submitted
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Electron Spin Resonance in Antiferro-Quadrupolar Ordered CeB_6[1] PEDRO SCHLOTTMANN, Florida State University — CeB_6 is a *cubic* heavy fermion compound with a Γ_8 ground-quartet with antiferro-quadrupolar (AFQ) order below 4 K. An ESR signal was observed [1] in the AFQ phase. Single ions with a Γ_8 ground-multiplet should display four transitions, but only one resonance was observed. Several fundamental questions arise: (1) why is only one transition seen, (2) why was this transition observed if the Kondo temperature is larger than the linewidth of the resonance, and (3) can the resonance be explained with localized moments or is an itinerant picture of heavy electron spins necessary? The interplay of AFQ and ferromagnetic correlations on the phase diagram, the magnetization and the ESR linewidth are discussed [2]. In contrast to other Yb and Ce heavy fermion systems displaying an ESR signal, CeB_6 does not have strong magnetic anisotropy with ferromagnetic correlations, rendering an observable narrow resonance [3,4]. The AFQ state is necessary for an ESR signal in the present case [2].

[1] S.V. Demishev *et al*, Phys. Rev. B **80**, 245106 (2009);
[2] P. Schlottmann, Phys. Rev. B **86**, 075135 (2012);
[3] E. Abrahams and P. Wölfle, Phys. Rev. **78**, 104423 (2008); **80**, 235112 (2009);
[4] P. Schlottmann, Phys. Rev. B **79**, 045104 (2009).

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