

## **Dual nature of 3d electrons in YbT<sub>2</sub>Zn<sub>20</sub> (T Co; Fe) evidenced by electron spin resonance**

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### **Abstract**

The electron spin resonance experiments were carried out in the single crystals YbFe<sub>2</sub>Zn<sub>20</sub>. The observed spin dynamics is compared with that in YbCo<sub>2</sub>Zn<sub>20</sub> and Yb<sub>2</sub>Co<sub>12</sub>P<sub>7</sub> as well as with the data of inelastic neutron scattering and electronic band structure calculations. Our results provide direct evidence that 3d electrons are itinerant in YbFe<sub>2</sub>Zn<sub>20</sub> and localized in YbCo<sub>2</sub>Zn<sub>20</sub>. Possible connection between spin paramagnetism of dense heavy fermion systems, quantum criticality effects, and ESR spectra is discussed.

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