

MAGNETISM IN CaRuO₃

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CaRuO₃ is a narrow-band metal with strong electronic correlations that is expected to be influenced in many respects by quantum criticality. From magnetic point of view it is considered a quantum paramagnet very close to ferromagnetic instability; nevertheless, a unified and integrated picture on magnetism of this material is still missing.

In this article we present the results of specific heat and magnetization measurements on very high quality and purity polycrystalline CaRuO₃ pellets at temperatures from 2 to 300 K. We found a strong logarithmic upturn of specific heat over temperature C/T below 13 K, its sensitivity to magnetic field indicates the magnetic origin of this anomaly. This observation gives further evidence of non-Fermi liquid electronic behavior in this material [1]. Magnetic susceptibility measurements have confirmed the large negative Weiss temperature (around -200 K) in this system. Low-field susceptibility measurements revealed hysteresis in ZFC and FC magnetization curves with bifurcation at 85 K, what signalizes the existence of magnetic clusters. Moreover, at lowest measuring magnetic fields of 5 and 10 mT a new feature, a broad bump has been observed around 20 K on the ZFC curves, indicating further possible ordering. The small hysteresis loop evidenced at 2 K supports the idea of ferromagnetic correlations in the system.

[1] A. Zorkovská, *et al.*, *Acta Physica Polonica A* **113**, 351, (2008).

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13.4 cm

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