# Magnetic properties of single crystal $Ce_3Ru_4Al_{12}$

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$Ce_3Ru_4Al_{12}$ crystallizes in the hexagonal $Gd_3Ru_4Al_{12}$-type crystal structure (space group $P6_3/mmc$). The magnetic properties of $Ce_3Ru_4Al_{12}$ were investigated by specific heat, electric resistivity and magnetization measurements on single crystalline sample. Paramagnetic state seems to persist to the lowest measured temperatures (0.4 K) contrary to previous results on polycrystalline sample [1], possible source of disagreement will be discussed. The specific heat shows a logarithmic increase at low temperatures. The temperature dependence of magnetisation does not obey the Curie-Weiss law and indicates presence of valence fluctuations. The experimental results will be compared with theoretical models.

**References:**

[1] Ge, W., Michioka, Ch., Ohta, H. et al., Solid State Communications 195, 1-5 (2014).