Anisotropic resistivity of structural-defects-Kondo ferromagnet UPS

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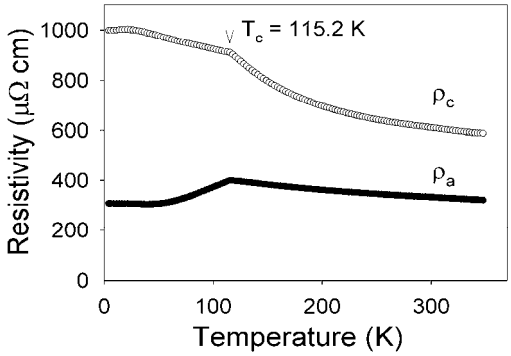
Non-magnetic interactions between conduction electrons and two-level system (TLS) may cause behaviors analogous to the ordinary (magnetic) Kondo effect (see [1] for review). One may expect that such phenomena *i.e.* TLS-Kondo or in other words, orbital-Kondo (OK) [2], may coexist with ferromagnetism. Therefore a low-T up-turn of resistivity and low-T peak of thermoelectric observed in ferromagnetic state of UPS and UAsSe (examined along a-axis) were considered as clear signs of OK phenomena.



Single crystals of tetragonal UPS grow as thin plates perpendicular to c-axis (easy magnetic axis). Recently, we have grown crystals as thick as 0.8 mm. This allowed us to determine two components of resistivity tensor, shown in figure, and resolve the resistivity into contributions corresponding to magnetic, orbital-Kondo, and phonon scattering. Two last contributions were compared to those known for isostructural diamagnetic compounds ThAsSe well proved to be the orbital-Kondo system [5].

[1] D. L. Cox, A. Zawadowski, Adv. Phys. **47** (1998) 599.
[2] G. Zaránd, cond-mat/0411348
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[4] T. Cichorek *et al.,* Acta Phys. Pol. B **34** (2003) 1339.
[5] T. Cichorek *et al.,* Phys. Rev. B **68** (2003) 144411.

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