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Anomalously huge resistivity peak under pressure in CeRhGe

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CeRhGe crystallizes in the TiNiSi-type orthorhombic structure (space group $Pnma$), which is characterized that the Ce atoms line up a quasi-one dimensional zigzag chain along the a -axis. We have measured the electrical resistivity under pressure up to 2 GPa. The resistivity at ambient pressure decreases monotonously below a Néel temperature $T_N = 10$ K [1]. With increasing pressure, the resistivity has a peak around T_N , which is anomalously enhanced up to 1.2 GPa. With further increasing pressure, the resistivity peak is diminished and T_N becomes zero at a critical pressure $P_c = 1.9$ GPa [2]. We suppose there is a possibility that this resistivity peak is characteristic for an antiferromagnet with a spin density wave. The A value of the resistivity ρ in the Fermi liquid relation of $\rho = \rho_0 + AT^2$ is also found to increase with increasing pressure and has a maximum at $P_c = 1.9$ GPa. ρ_0 also increases with increasing pressure and has a maximum at 1.3 GPa.

Recently, we have succeeded in growing single crystals of CeRhGe, and measured the electrical resistivity and magnetic susceptibility, which are highly anisotropic.

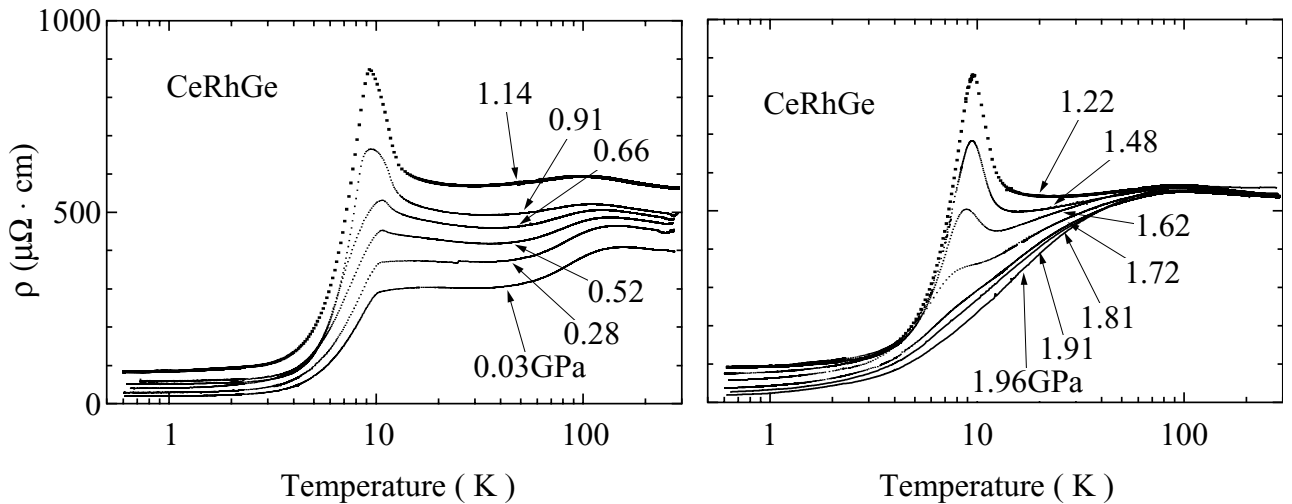


Figure 1: Temperature dependence of the electrical resistivity under pressure in CeRhGe.

[1] P. Rogl, B. Chevalier, M. J. Besnus, J. Etourneau
J. Magn. Magn. Mater. **80** (1989) 305.

[2] R. Asai, A. Thamizhavel, H. Shishido, T. Ueda, Y. Inada, R. Settai,
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