(PS47)

Magnetism of CeRhGe

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CeRhGe crystallizes in the TiNiSi-type orthorhombic structure, where the Ce-atoms get lined up zigzag chains along the a-axis. It orders antiferromagnetically at $T_N = 9.4\,K$. We have grown single crystalline samples and measured the electrical resistivity, specific heat, high-field magnetization, magnetic susceptibility, neutron scattering and electrical resistivity under pressure. The magnetization and magnetic susceptibility are highly anisotropic, reflecting the crystal structure. We found that the antiferromagnetic easy - axis is along the a-axis. Figure 1 shows the temperature dependence of the susceptibility. The magnetic susceptibility and magnetization were analyzed on the basis of the crystalline electric field scheme of localized-$4f$ energy levels, and we found that there is a very large splitting energy of $4f$ levels. From the neutron scattering measurement the magnetic structure is of the 3-D incommensurate antiferromagnetic one.

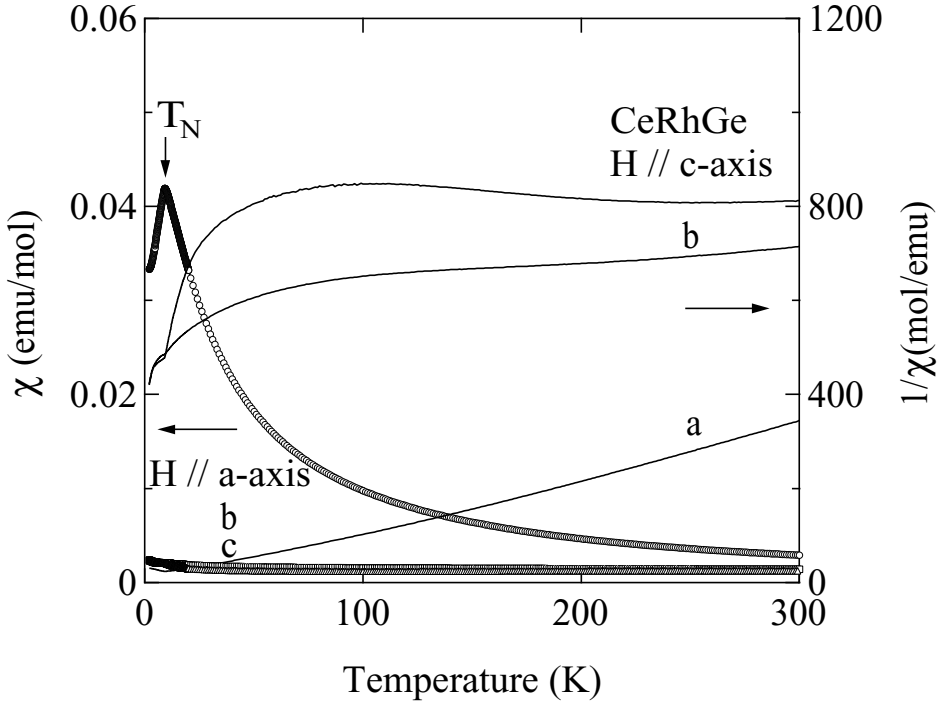

Figure 1: Temperature dependence of the magnetic susceptibility (circles) and the inverse susceptibility (solid lines) of CeRhGe.