

Kondo-lattice behaviour in $\text{CeRhSn}_{1-x}\text{In}_x$ as a function of carrier number

A. Ślebarski, M. Fijałkowski and J. Goraus

Institute of Physics, University of Silesia, 40-007 Katowice, Poland

CeRhSn has attracted special interest due to its non-Fermi liquid (NFL) behavior at the low temperatures, well described by the Griffiths-McCoy model. In contrast, for the compound CeRhIn various experimental methods unanimously revealed a NFL ground state with a high Kondo temperature of about 300 K and an intermediate-valence behaviour of Ce. To get deeper insight into the interactions responsible for the change in ground state properties between CeRhSn and CeRhIn, we performed a detailed study of the magnetic susceptibility and specific heat for the system of $\text{CeRhSn}_{1-x}\text{In}_x$ alloys. In this system the carrier concentration diminishes upon In substitution for Sn. The ground state properties are discussed as a function of variable valence electron number induced by substitution of In for Sn and of the accompanying effect of the change hybridization energy V between f-electron and conduction electron states.

9.7 cm

13.4 cm

Subject category :

1. Strongly Correlated Electrons and High Temperature Superconductivity

Presentation mode :

oral

Corresponding author :

A. Ślebarski

Address for correspondence :

Institute of Physics
University of Silesia
40-007 Katowice

Email address :

andrzej.slebarski@us.edu.pl