

Poster Presentation

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Structure Determination of Ho₂PdSi₃

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Holmium-Palladium-Silicide Ho₂PdSi₃ is a member of rare earth-transition metal silicides exhibiting a wide range of interesting magnetic and electrical properties like multiple transition temperatures. The crystal structure results from HoSi₂ by substitution of Si by Pd which is ordering commensurably with a $2 \times 2 \times 8$ superstructure confirmed by a previous XRD and a Diffraction Anomalous Fine Structure (DAFS) measurement of the super structure reflection $1/2 \ 1/2 \ 3/8$. DAFS is a X-ray method combining the advantages of absorption and diffraction and hence offers the possibility of element and site selective studies. Thus, it was feasible to probe the local environment of Ho and Pd separately. In the following, we will present a comparison of several structure proposals of Ho₂PdSi₃ with experimental data from beamline E2 and BW1 of the former synchrotron DORIS III at DESY/HASYLAB.

Keywords: DAFS, rare earth