

Abstract Submitted
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Crystal Fields and the $\gamma \rightarrow \alpha$ transition in Ce SUKALPA BASU, PETER RISEBOROUGH, Temple University — In the $\gamma \rightarrow \alpha$ transition of Cerium, the material undergoes an isostructural change at which the volume changes by 15% and the magnetic character changes. Recently, the transition has been described in terms of a balance between the free energy of the magnetic moments and the characteristic energy scale of the α phase. The field-temperature dependence of the phase diagram has been predicted, and was confirmed by experiment. Inelastic neutron scattering experiments on the γ -phase of Ce have shown indications of crystal field splittings, and similar experiments have determined the energy scale of the α phase. We shall examine the effects of the crystalline field splittings within the framework of NCA calculations on the single-impurity Anderson model, and examine their consequence for the phase diagram.

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