

Abstract Submitted  
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**Yb- and Ce- based, dilute rare earth intermetallic compounds:  
Fully ordered compounds that approach the single Kondo-impurity limit**  
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Iowa State University — Dilute, rare earth intermetallic compounds are ordered  
structures in which the rare earth comprises less than 5% atomic of the compound,  
but still fully occupies a unique crystallographic site. Whereas for local moment  
bearing R-members these series offer the possibility of studying the RKKY interac-  
tion for relatively large R-R spacing, the R = Yb and Ce members offer a unique  
opportunity to study the Kondo lattice for concentrations that start to approach  
the single ion limit. In this talk we will present data on six Yb-based, and two  
Ce-based, dilute rare earth intermetallic compounds. Despite the rather different  
behavior of the analogous Gd-based members, the thermodynamic and transport  
properties of the Yb-based materials are rather similar. This new family of heavy  
Fermion materials promises to be a fruitful testing ground for current theories of  
correlated electron physics.

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