

Abstract Submitted
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On Heavy Fermion Superconductivity and Quantum Criticality in the 115 series KENNETH BURCH, University of California, San Diego — We have performed a detailed analysis of the optical properties of the 1-1-5 series (CeTIn₅ where T=Co,Ir,Rh), revealing the hybridization gap (Δ) as key to understanding their rich phase diagram. Surprisingly we find that Δ for only one of the four bands crossing the Fermi surface determines the properties of the system. Furthermore, these carriers are the lightest and produce the smallest Δ . Additionally we discuss connections between this Δ , the superconducting transition temperature and the symmetry of the superconducting gap. This study demonstrates an experimental link between superconductivity and the parameter governing the magnetic Quantum Critical Point.

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