

Abstract Submitted
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High Magnetic Field Properties of $\text{Ce}_2\text{Rh}_3\text{Ge}_5$ MARK WARTENBE, NHMFL, FSU, LANL, FERMIOLGY OF CE2RH3GE5 TEAM¹
— The competition between localized and delocalized f electrons in heavy fermion materials produces a wide variety of interesting physical phenomena. Among these compounds is $\text{Ce}_2\text{Rh}_3\text{Ge}_5$. This heavy-fermion system undergoes an antiferromagnetic transition below 4K and exhibits an angle dependent magnetic phase transition around 25 tesla. In addition, RF conductivity measurements in pulsed field (65T) have revealed quantum oscillations. Temperature dependence at fixed angle indicates relatively heavy effective masses of values ranging from around $3m_e$ on up to $10m_e$. This indicates that the narrow f-electron density of states is partially hybridized close to the Fermi energy, but also places strict cryogenic constraints upon the measurement (³Helium temperatures are required). Fermi surface calculations have produced complex figures which lend validation to such rich behavior.

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