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De Haas-van Alphen Effect across the $CeRh_{1-x}Co_xIn_5$ Phase Diagram SWEE K. GOH, University of Cambridge, JOHNPIERRE PAGLIONE, University of California, San Diego, M. SUTHERLAND, C. BERGEMANN, University of Cambridge, T. A. SAYLES, M. B. MAPLE, University of California, San Diego — We present de Haas-van Alphen (dHvA) data across the phase diagram of $CeRh_{1-x}Co_xIn_5$ down to ultra-low temperatures. The chemical substitution of Co for Rh, which changes the electronic structure of $CeRhIn_5$ from a localized $4f$ electron configuration at $x = 0$ to itinerant behaviour at $x = 1$, is analogous to the application of external pressure to the antiferromagnet $CeRhIn_5$, which was shown to exhibit a discontinuous evolution of its Fermi surfaces near 2.35GPa [Shishido *et al.* J Phys. Soc. Jpn. **74**, 1103 (2005)]. Exploiting the rotational degree of freedom afforded by ambient pressure measurements of single-crystal specimens, we analyze both the Fermi surface geometry and quasiparticle effective masses of $CeRh_{1-x}Co_xIn_5$ as a function of chemical substitution in order to investigate the evolution of electronic structure through the antiferromagnetic quantum critical point of this system.

Swee K. Goh
University of Cambridge

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