

Abstract Submitted
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The High-Field Fermi Surface of YbRh₂Si₂ AARON SUTTON, PATRICK M.C. ROURKE, Department of Physics, University of Toronto, 60 St. George Street, Toronto, Ontario, Canada M5S 1A7, VALENTIN TAUFOR, INAC, SPSMS, CEA Grenoble, 38054 Grenoble, France, ALIX MCCOLLAM, High Field Magnet Laboratory, Institute for Molecules and Materials, Radboud University Nijmegen, Netherlands, GERARD LAPERTOT, GEORG KNEBEL, JACQUES FLOUQUET, INAC, SPSMS, CEA Grenoble, 38054 Grenoble, France, STEPHEN R. JULIAN, Department of Physics, University of Toronto, 60 St. George Street, Toronto, Ontario, Canada M5S 1A7 — We report the culmination of our de Haas-van Alphen (dHvA) oscillation rotation studies on the heavy Fermion material YbRh₂Si₂. Past measurements included rotations in the a-b and a-c planes and resulted in the observation of a previously unobserved frequency attributed to the so-called J-sheet of the Fermi surface. While the purpose of these measurements was to determine whether or not the high field Fermi surface resembled a small or large Fermi surface, the measurements have highlighted the need for more advanced band structure calculations in order to determine its nature. In our latest measurements we completed our study by rotating from the (110) direction towards the c-axis. The experiment was successful in elucidating a new aspect of the Fermi surface, and though qualitative agreement with rudimentary band structure calculations was observed, the measurement has reinforced the need for a more comprehensive theoretical understanding of the material.

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