

Abstract Submitted
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Magnetic-field-dependence of the YbRh₂Si₂ Fermi surface
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Grenoble, STEPHEN JULIAN, University of Toronto — Magnetic-field-induced
changes of the Fermi surface play a central role in theories of the exotic quantum
criticality of YbRh₂Si₂. We have carried out de Haas–van Alphen measurements in
the magnetic field range $8 \text{ T} \leq H \leq 16 \text{ T}$, and directly observe field-dependence
of the extremal Fermi surface areas. Our data support the theory that a low-field
“large” Fermi surface, including the Yb $4f$ quasi-hole, is increasingly spin-split until
a majority-spin branch undergoes a Lifshitz transition and disappears at $H_0 \approx 10 \text{ T}$,
without requiring $4f$ -localization at H_0 .

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