Poster

Title: de Haas-van Alphen perspective on the origin of heavy fermions in UPt3

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Abstract:

Precise de Haas van Alphen (dHvA) oscillation measurements on the heavy fermion superconductor UPt$_3$ are available as a function of magnetic field angle. It was recently proposed that the heavy quasiparticles in this material arise from the localization of two of the three 5f electrons of the U ions [Zwicknagl et al., PRB 65, 081103R (2002)]. The predicted Fermi surface topology however differs from traditional bandstructure calculations. We will focus on the experimentally observed angle dependence of the hole-like δ-orbit, as this appears difficult to reconcile with the Fermi surface of Zwicknagl et al.