

Abstract Submitted
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Composite Fermions with a Warped Fermi Contour¹ M.A. MUEED, DOBROMIR KAMBUROV, YANG LIU, MANSOUR SHAYEGAN, LOREN PFEIFFER, KEN WEST, KIRK BALDWIN, Princeton Univ, ROLAND WINKLER, Northern Illinois Univ — Composite fermions (CFs), quasi-particles formed by attaching an even number of flux quanta to each charged carrier in high perpendicular magnetic fields (B), capture many phenomena exhibited by an interacting system of two-dimensional carriers. The flux attachment cancels out the external B at a half-filled Landau level, enabling CFs to occupy a Fermi sea and possess a Fermi contour, similar to their $B = 0$ carrier counterparts. Because the CFs are primarily a manifestation of interaction, one might argue that they should retain no memory of the $B = 0$ particles, including their energy band properties. We will present tantalizing evidence through commensurability measurements that the composite fermions can be strongly influenced by the characteristics of the Landau level in which they are formed. In particular, the composite fermions have a warped Fermi contour when their Landau level originates from a hole band with significant warping.

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