

Abstract Submitted
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Even-denominator Fractional Quantum Hall Effect at a Landau Level Crossing¹ YANG LIU, SUKRET HASDEMIR, DOBROMIR KAMBUROV, AURELIUS GRANINGER, MANSOUR SHAYEGAN, LOREN PFEIFFER, KEN WEST, KIRK BALDWIN, ROLAND WINKLER, Princeton Univ — The fractional quantum Hall (FQH) effect, observed in two-dimensional charged particles at high magnetic fields, occurs when the filling factor ν of the quantized Landau levels is a fraction which, with very few exceptions, has an odd denominator. Here we describe unexpected phenomena in two-dimensional hole systems confined to GaAs quantum wells. We observe an unusual crossing of the two lowest-energy Landau levels. The crossing leads to a weakening or disappearance of the commonly seen odd-denominator FQH states in the filling range $1/3 < \nu < 2/3$. But, surprisingly, a new FQH state at the even-denominator filling $\nu = 1/2$ comes to exist at the crossing.

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