

Abstract Submitted
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Evolution of $7/2$ fractional quantum Hall state in two subband systems¹ YANG LIU, JAVAD SHABANI, D. KAMBUROV, M. SHAYEGAN, L.N. PFEIFFER, K.W. WEST, K.W. BALDWIN, Electrical engineering, Princeton University — We report the evolution of the fractional quantum Hall state (FQHS) at total Landau level (LL) filling factor $\nu = 7/2$ in wide GaAs quantum wells in which electrons occupy two electric subbands. The data reveal subtle and distinct evolutions as a function of density, magnetic field tilt-angle, or symmetry of the charge distribution. At intermediate tilt angles, for example, we observe a strengthening of the $\nu = 7/2$ FQHS. Moreover, in a well with asymmetric charge distribution, there is a developing FQHS when the LL filling factor of the symmetric subband ν_S equals $5/2$ while the antisymmetric subband has filling $1 < \nu_A < 2$.

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