

Abstract Submitted
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Confinement of Fractional Quantum Hall States ROBERT WILLET, MICHAEL MANFRA, KEN WEST, LOREN PFEIFFER, Bell Laboratories, Alcatel-Lucent — Confinement of small-gapped fractional quantum Hall states facilitates quasiparticle manipulation and is an important step towards quasiparticle interference measurements. Demonstrated here is conduction through top gate defined, narrow channels in high density, ultra-high mobility heterostructures. Transport evidence for the persistence of a correlated state at filling fraction $5/3$ is shown in channels of $2\mu\text{m}$ length but gated to near $0.3\mu\text{m}$ in width. The methods employed to achieve this confinement hold promise for interference devices proposed for studying potential non-Abelian statistics at filling fraction $5/2$. R.L. Willett, M.J. Manfra, L.N. Pfeiffer, K.W. West, Appl. Phys. Lett. **91**, 052105 (2007).

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