

Abstract Submitted
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Tunneling experiments in the lowest Landau level¹ C. DILLARD, XI LIN, M.A. KASTNER, MIT, L.N. PFEIFFER, K.W. WEST, Princeton University — Recently, a quasiparticle-tunneling experiment on the $5/2$ state [1] led to the unintentional discovery of a process we term annealing. In this experiment top gates are used to bring counter-propagating edge states close enough together for tunneling to occur. By keeping the quantum point contact (QPC) top gates energized for a few days at 4 Kelvin, one can create equal electron densities in the QPC region and the bulk of a GaAs heterostructure. This is a great advantage for studying quasiparticle tunneling in QPCs. Conditions under which annealing has proved effective are presented. In addition, in order to better understand and control quasiparticle tunneling in QPCs, further tunneling experiments have been performed in the lowest Landau level.

[1] Iuliana P. Radu, J. B. Miller, C. M. Marcus, M. A. Kastner, L. N. Pfeiffer, and K. W. West, *Science* 320, 899 (2008).

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