

Abstract Submitted
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Anomalous resistance across a quantum point contact in the integer and fraction quantum Hall regimes COLIN DILLARD, XI LIN, MARC KASTNER, MIT, LOREN PFEIFFER, KEN WEST, Princeton University — A ~ 600 nm quantum point contact (QPC) is studied in various integer and fractional quantum Hall states. An anomalous increase of the differential resistance across the QPC from the expected quantized value is observed at nonzero DC bias. The onset of this increased differential resistance occurs sharply at DC bias values which vary continuously with magnetic field and gate voltage. Dependence of the increased resistance on filling factor, magnetic field, gate voltage, and temperature is presented. Of particular interest is the observation that the onset DC bias shows opposite gate voltage dependence for integer and fractional quantum Hall states.

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