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Anomalous plateau formation and improved quantization in charge pumping under the application of a perpendicular magnetic field SAMUEL WRIGHT, Cavendish Laboratory and Toshiba Cambridge Research Laboratory, MARK BLUMENTHAL, Cavendish Laboratory and National Physical Laboratory, GODFREY GUMBS, Hunter College of the City University of New York, ADAM THORN, MICHAEL PEPPER, Cavendish Laboratory, T.J.B.M. JANSSEN, National Physical Laboratory, STUART HOLMES, Toshiba Cambridge Research Laboratory, DAVE ANDERSON, GEB JONES, CHRISTINE NICOLL, DAVE RITCHIE, Cavendish Laboratory — We present experimental results of high frequency quantized charge pumping through a quantum dot formed by the electric field arising from applied voltages in a GaAs/AlGaAs system in the presence of a perpendicular magnetic field B. Improved quantization and robustness in gate voltage are seen as B is increased. Under application of even higher B fields, the formation of anomalous plateaus in the pumped current are seen.

Samuel Wright
Cavendish Laboratory and Toshiba Cambridge Research Laboratory

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