Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Imaging Electron Flow in Two-Dimensional Electron Gases M. P. JURA, M. A. TOPINKA, A. R. SCIAMBI, D. H. LO, D. GOLDHABER-GORDON, Stanford University — We present images of electron flow from a quantum point contact (QPC) into a surrounding two-dimensional electron gas (2DEG). We resolve flow patterns associated with the one-dimensional modes responsible for quantized conductance through the QPC. The imaging technique relies on scanning a charged tip over the 2DEG and simultaneously measuring the conductance through the sample [1]. We show images of electron flow in different GaAs/AlGaAs heterostructures, and we discuss which features of 2DEGs can affect both application of this technique and the observed current flow paths. [1] M. A. Topinka *et al.*, Nature 410, 183 (2001).

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Date submitted: 30 Nov 2005 Electronic form version 1.4