Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

**Real-Time Transport Properties of Multiply-Connected $LaAlO_3/SrTiO_3$ Nanostructures**[1] ALEXANDRE GAUTHIER, PATRICK IRVIN, JEREMY LEVY, University of Pittsburgh — Electronic nanostructures can be created at the $LaAlO_3/SrTiO_3$ interface using a conductive atomic force microscope technique[2]. These nanowires can be arranged into complex nanostructures such as photodetectors[3] and single-electron transistors[4]. We have developed a way to characterize multi-terminal devices in real time. AC voltages at distinct frequencies are applied to every electrical contact for the device. Fourier analysis of the current response at each electrode allows the *N*-terminal conductance matrix to be determined simultaneously.

[1]We gratefully acknowledge support for this work from ARO (W911NF-08-1-0317), ONR (N00014-13-1-0806), and AFOSR (FA9550-12-1-0268).
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[4]G. Cheng, *et al.*, Nature Nanotechnology **6**, 343 (2011)

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Date submitted: 15 Nov 2013 Electronic form version 1.4