Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Electrical measurement of pure spin currents in a two dimensional electron gas ANANTH VENKATESAN, SERGEY FROLOV, JOSHUA FOLK, University of British Columbia, Canada, WERNER WEGSCHEIDER, Universität Regensburg,Germany — We present an electrical measurement of pure spin currents in a $AlGaAs/GaAs$ two dimensional electron gas. Spin polarized electrons are injected into the centre of a 90μm long channel through a quantum point contact (QPC) in a large in-plane magnetic field. The charge current flows to one end of the channel. A pure spin current flows to the opposite end, driven by a chemical potential difference between the two spin populations. This difference is recorded using spin polarized QPCs along the channel in regions free of charge current.

Ananth Venkatesan
University of British Columbia,Vancouver,Canada

Date submitted: 05 Dec 2006 Electronic form version 1.4