Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Dissipation through spin Coulomb drag in electronic spin transport and optical excitations[1] IRENE D'AMICO, Department of Physics, University of York, CARSTEN A. ULLRICH, Department of Physics and Astronomy, University of Missouri-Columbia — Spin Coulomb drag (SCD) constitutes an intrinsic source of dissipation for spin currents in metals and semiconductors. We discuss the power loss due to SCD in potential spintronics devices and analyze in detail the associated damping of collective spin-density excitations. It is found that SCD contributes substantially to the linewidth of intersubband spin plasmons in semiconductor quantum wells, which suggests the possibility of a purely optical quantitative measurement of the SCD effect in a parabolic well through inelastic light scattering.

[1]Work supported by DOE Grant No. DE-FG02-05ER46213, NSF Grant No. DMR-0553485, Research Corporation, and the Nuffield Foundation Grant NAL/01070/G.

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Date submitted: 29 Nov 2005 Electronic form version 1.4