

Abstract Submitted
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Spin Precession in Oblique Magnetic Fields JING LI, BIQIN HUANG, Department of Electrical and Computer Engineering, University of Delaware, IAN APPELBAUM, Department of Physics, University of Maryland, DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING, UNIVERSITY OF DELAWARE TEAM — Spin precession and dephasing (“Hanle effect”) provide an unambiguous means to establish the presence of spin transport in semiconductors. We compare theoretical modeling with experimental data from drift-dominated silicon spin-transport devices, illustrating the non-trivial consequences of employing oblique magnetic fields (due to misalignment or intentional, fixed in-plane field components) to measure the effects of spin precession. Model results are also calculated for Hanle measurements under conditions of diffusion-dominated transport, revealing an expected Hanle peak-widening effect induced by the presence of fixed in-plane magnetic bias fields.

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