

Abstract Submitted
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Contributions to oblique Hanle linewidths in Fe/GaAs non-local spin valve transport¹ CHAFFRA AWO-AFFOUDA, O. M. J. VAN 'T ERVE, G. KIOSEOGLOU, A. T. HANKBICKI, M. HOLUB, C. H. LI, B. T. JONKER, Naval Research Laboratory — The transport Hanle effect linewidth is commonly used to determine spin lifetimes in spin- polarized transport structures. We show that the magnetic domain structure of the ferromagnetic contacts used to inject and detect the spin current introduces asymmetries to the Hanle lineshape. In addition, the nuclear spin polarization can produce anomalous narrowing and broadening of the Hanle linewidth depending upon the orientation of the transport spin and the applied field. These contributions can significantly impact the apparent spin lifetime extracted from the Hanle curve, but are not included in the analysis typically applied.

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