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**Magnetization Precession in Interlayer Exchange-Coupled Thin Films**<sup>1</sup> STEVEN MICHALSKI, JIAN ZHOU, RALPH SKOMSKI, NIKOLAY POLUSHKIN, ROGER KIRBY, Department of Physics and Astronomy and Center for Materials Research and Analysis, University of Nebraska-Lincoln, 68588-0111, Lincoln, NE — We have studied the static and fast dynamic magnetic properties of exchange-coupled magnetic layers using both magneto-optical measurements and conventional magnetometry. The samples studied include [Co/Pt] multilayers with perpendicular magnetic anisotropy (PMA) coupled via a variable thickness intervening Cu (Pt) layer to a Co (Sm-Co) layer with in-plane magnetic anisotropy. Such systems should exhibit a wide variety of magnetic configurations, permitting control of magnetic properties through control of exchange strength and PMA. The hysteresis loops show direct evidence of ferromagnetic exchange coupling. We report here the results of magnetization precession measurements using a femtosecond laser in a pump-probe experiment with direct optical excitation. For the samples studied so far, we observe only one precession frequency for a given applied magnetic field, rather than the expected two, but the frequency varies with the thickness of the coupling layer as expected. Our results are interpreted in terms of an LLG model which includes PMA and variable exchange coupling.

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Steven Michalski

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