Abstract Submitted
for the 4CF17 Meeting of
The American Physical Society

Measuring the Interfacial Dzyaloshinskii-Moriya Interaction in Layered GdCo Samples[1] KATHERINE NYGREN, Physics Department, Colorado State University, ROBERT STREUBEL, UC-Berkeley, KRISTEN BUCHANAN, Physics Department, Colorado State University — In this poster I will discuss our plans to measure the spin wave frequencies in magnetic GdCo samples capped with platinum (Pt) using Brillouin light scattering (BLS). As a result of the large spin-orbit interactions due to the platinum, these thin films are expected to possess a large interfacial Dzyaloshinskii-Moriya interaction (DMI), which in turn, results in a frequency shift between surface spin waves that propagate in opposing directions. I will discuss how this frequency shift comes about and how it can be detected by BLS as a small difference in the photon frequency from that of the probe laser. We can select different wave vectors k for our spin waves by changing the angle of our sample with respect to the BLS probe laser. Measurements of the surface wave frequencies as a function of k, currently ongoing in our lab, will allow us to obtain a quantitative measurement of the interfacial DMI for these samples.

[1]This work is supported by the National Science Foundation Division of Materials Research under Grant No. 1709525 and the U.S. Department of Energy Basic Energy Sciences Grant No. ER46854.

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Date submitted: 20 Sep 2017 Electronic form version 1.4