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Investigating Spin Transport in Magnetic Oxide Systems with Ferromagnetic Resonance YASEMIN OZBEK, XUANYI ZHANG, DIVINE KUMAH, DALI SUN, North Carolina State University — Conventional electronics that use the motion of electrons (charge current) to power devices and store memory have shortcomings, one of which is the loss of energy through the dispersion of heat generated by electron collisions. The field of spintronics has developed to reduce energy losses due to charge currents by storing and transmitting information using the spin of electrons. Hence, understanding spin transport and developing new spintronic materials is of great scientific and technological interest. In this study, we investigate the progression of spin waves in a novel complex oxide material. To do this, we utilize ferromagnetic resonance (FMR) to measure the properties of the spin current, which include the FMR peak-to-peak width and Gilbert damping parameter, which provide information on the sample's anisotropy and spin current damping respectively. We were successful in finding temperature dependence in our sample's damping parameter and effective magnetization. This study will broaden the current knowledge of spin transport in magnetic oxides by expanding the list applicable materials.

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