Abstract Submitted
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Magnon-drag and thermomagnetic transport properties of Ca doped YIG[1] YUANHUA ZHENG, BIN HE, The Ohio State University - Columbus, XI CHEN, JIANSHI ZHOU, University of Texas at Austin, LI SHI, ROBERTO MYERS, JOSEPH HEREMANS, The Ohio State University - Columbus — Yttrium-iron garnet (YIG) is an insulating ferromagnet commonly used to study various spin transport phenomena: in conjunction with a Pt film, it generates the well-known spin-Seebeck effect [1]. Because of the close relationship between the spin-Seebeck effect and the magnon-drag charge Seebeck effect [2], we investigate the thermoelectric transport properties of an electrically conducting bulk YIG crystal doped p-type with Ca. A large and sharp change in the thermopower of Ca:YIG near the Curie temperature has been observed, which is potentially explained by the magnon-drag model. We present the temperature dependence of electrical conductivity, magneto-thermopower, and Hall coefficient of Ca:YIG. Photo-excitation of the carriers from the valence band into the Ca level results in photoconductivity and photo-Seebeck effects as well. [1] Jin et al., *Phys. Rev. B* 92, 054436 (2015) [2] Lucassen et al., Appl. Phys. Lett. 99 262506 (2011)

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