

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Transverse Spin Seebeck Effect on YIG/Pt¹ ARATI PRAKASH, STEPHEN BOONA, HYUNGYU JIN, JOSEPH HEREMANS, The Ohio State University — The existence of the longitudinal spin-Seebeck effect (LSSE) is well established and supported by theory. Much more controversial is the nature of the signals observed in the transverse spin-Seebeck (TSSE) geometry, where the heat current (x) is orthogonal to the direction of spin current propagation (y). TSSE has been described as simply non-local thermal spin-injection [1], but questions remain about the fact that the effect is observed at macroscopic length scales. To explore possible explanations for the observed TSSE signals, we report data from new TSSE measurements on the YIG/Pt system. The system studied has multiple Pt strips deposited in series upon bulk single crystals of YIG. We investigate the TSSE coefficient as a function of four variables: (1) sample temperature; (2) magnitude of the temperature gradient; (3) position of Pt strips along x ; and (4) width of Pt strips along x . We consider nonlinear effects and the role of magnon density in the interpretation of our results. [1] Boona et al., Energy and Environ. Sci. 7 885 (2014)

¹Work supported by the ARO- MURI grant W911NF-14-1-0016 and NSF MRSEC program, Grant No. DMR 1420451

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Date submitted: 14 Nov 2014

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