Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Whistler wave generation by electron temperature anisotropy during asymmetric magnetic reconnection in space[1] JOSH SWERDLOW, Yale University, JONGSOO YOO, EUN-HWA KIM, MASAAKI YAMADA, HANTAO JI, Princeton Plasma Physics Laboratory — Generation of whistler waves during asymmetric reconnection is studied by analyzing data from a MMS (Magnetospheric Multiscale) event [1]. In particular, the possible role of electron temperature anisotropy in excitation of whistler waves on the magnetosphere side is discussed. The local electron distribution function is fitted into a sum of bi-Maxwellian distribution functions. Then, the dispersion relation solver, WHAMP (waves in homogeneous, anisotropic, multicomponent plasmas [2]), is used to obtain the local dispersion relation and growth rate of the whistler waves. We compare the theoretical calculations with the measured dispersion relation.
[1] Burch et al., Science 352, aaf2939, 2016
[2] Rnnmark, Tech. Rep., Kiruna Geophys. Inst., Kiruna, Sweden, 1982

[1]This work was made possible by funding from the Department of Energy for the Summer Undergraduate Laboratory Internship (SULI) program. This work is supported by the US DOE Contract No.DE-AC02-09CH11466.

Josh Swerdlow
Yale University

Date submitted: 13 Jul 2017 Electronic form version 1.4