Abstract Submitted
for the GEC15 Meeting of
The American Physical Society

Effects of Secondary Electron Emissions from a Plasma Immersed Graphite Substrate ADRIAN LOPEZ, University of Michigan — Secondary electron emissions (SEE) from surfaces immersed in plasma has the potential to affect not only the sheath potential distribution and overall sheath voltage, but also influence the near plasma properties. In order to better understand how SEE can bring about changes in the bulk plasma, electron energy distribution measurements are made outside the sheath using a Langmuir probe. Rather than numerically differentiating the I-V characteristic, an AC superimposed signal is used to obtain the electron energy distribution function (EEDF). This approach allows for better resolution of the distribution function, in particular, the distri-bution tail. In this manner, numerical noise and artificial structure that arises due to numerical differentiation can be avoided. EEDF changes will be correlated with observed changes in the sheath potential of a graphite substrate irradiated with a monoenergetic electron beam. The implications of these observations for Hall engine operation are discussed.

Adrian Lopez
University of Michigan

Date submitted: 17 Sep 2015 Electronic form version 1.4