

Abstract Submitted
for the GEC10 Meeting of
The American Physical Society

Controlling Plasma Properties in Collisionless Magnetized Plasma with Active Boundaries¹ YEVGENY RAITSES, IGOR D. KAGANOVICH, PPPL, Princeton University, VLADIMIR I. DEMIDOV, West Virginia University, VALERY GODYAK, RF-Plasma Consulting, NOAH HERSHKOWITZ, University of Wisconsin-Madison — The plasma-surface interaction in the presence of strong electron emission has been studied theoretically and experimentally. The electron flux from the plasma to the wall is determined by the electron velocity distribution function (EVDF) and by the sheath potential, which are consistent with the wall properties. In a typical low-pressure gas discharge, the EVDF can significantly deviate from Maxwellian that may substantially alter the sensitivity of the collisionless plasma to the electron emission from the wall [1,2]. We will review recent results which demonstrated these effects in collisionless magnetized plasmas with active boundaries including electron emitting and biased walls and plasma boundaries [3].

[1] Y. Raitses, et al, IEEE TPS **34**, 815 (2006).

[2] D. Sydorenko, et al, PRL **103**, 145004 (2009).

[3] B. Longmier, et al, Rev. Sci. Instrum., **77**, 113504 (2006).

¹This work was supported by the US DOE under Contract AC02-76CH0-3073 and DE-SC0001939.

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Date submitted: 08 Jun 2010

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