

Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

Particle-in-Cell simulation of secondary electron emission effects in a trench geometry Y. NISHIMURA, C.W. HUANG, Y.C. CHEN, T.L. LIN, Institute of Space and Plasma Sciences, National Cheng Kung University — A Particle-in-Cell simulation code is developed to investigate interaction between plasma and material surfaces in a one dimensional geometry and a two dimensional trench geometry. Both the electron and ion dynamics are incorporated. In the presence of secondary electron emission, the sheath potential can disappear. Repeatedly reflecting electron beam components can drive kinetic instabilities.¹ Asymmetric effects of the reflecting wall conditions as well as Coulomb collisional effects are incorporated into the numerical simulation. This work is supported by National Science Council of Taiwan, NSC 100-2112-M-006-021-MY3 and NSC 103-2112-M-006-021-MY3.

¹M.D.Campanell, A.V.Khrabrov, and I.D.Kaganovich, Phys. Rev. Lett. **108**, 25501, 2012.

Yasutaro Nishimura
National Cheng Kung University

Date submitted: 11 Jul 2014

Electronic form version 1.4