

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Nonlinear effects due to Langmuir waves in densifying plasmas¹

NAT FISCH, ILYA DODIN, Princeton University — Electron Langmuir waves in plasma undergoing slow compression or rarefaction respond adiabatically to the modification of the plasma density and the pressure tensor, such that the total number of plasmons is conserved. However, the change in density modifies the ratio of the field energy to the plasma kinetic energy in ways that depend on how the density changes. The changes in field energy affect the ponderomotive forces, which can in turn govern a variety of plasma processes.

¹This work was supported by the NNSA under the SSAA Program through DOE Research Grant No. DE-FG52-04NA00139.

Nat Fisch
Princeton University

Date submitted: 17 Jul 2009

Electronic form version 1.4