

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Low Velocity Ion Stopping in a Strongly magnetized Plasma

CLAUDE DEUTSCH, ROMAIN POPOFF, LPGP Université Paris XI Orsay —
We focus attention on low velocity stopping of heavy ions in a strongly magnetized electron-ion plasma target considered in a guiding center approximation with electron Larmor radius much shorter than corresponding Debye length. Elaborating on an exact equivalence between low velocity stopping and particle diffusion through the magnetic field B [1], we can proceed to an analytic determination of the given friction coefficient pertaining to a stopping power projectile velocity. The latter embodies a combination of hydrodynamical in $1/B$ and kinetic in $1/B^2$ contributions. It is appropriate to use effective interactions regularizing quantum-mechanically the short range electron-ion interaction [2]

- [1] Y. Furutani, Y. Oda, C.Deutsch and M.M. Gombert, Phys Rev 26A,2913 (1982)
[2] C Deutsch,Phys Lett A60,317[1977]

Claude Deutsch
LPGP Université Paris XI Orsay

Date submitted: 22 Aug 2006

Electronic form version 1.4