

Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Kinetic Damping of Alfvén Eigenmodes in General Tokamak Geometry¹ LIMIN YU, Zhejiang University, GUOYONG FU, Princeton University — A non-perturbative kinetic/MHD eigenvalue code has been constructed for calculation of kinetic damping of shear Alfvén eigenmodes in general tokamak geometry. The model describes shear Alfvén waves with kinetic effects from both thermal species and energetic particles including thermal ion FLR, parallel electric field and energetic particle destabilization. The model generalizes the previous work [1] to general tokamak equilibria with finite aspect ratio, finite beta and non-circular shape. The code has been benchmarked against known analytic and numerical results for Alfvén eigenmodes such as GAE, TAE, and RSAE (or Alfvén Cascades). The code is being used to investigate the existence and kinetic damping of various Alfvén eigenmodes with non-perturbative kinetic effects from thermal species. The results will be presented. [1] G. Y. Fu, H. L. Berk and A. Pletzer, Phys. Plasmas 12, 082505 (2005)

¹This work is supported by The Chinese Scholarship Council and the U.S. Department of Energy under contract DE-AC02-76CH03073.

Guoyong Fu
Princeton University

Date submitted: 18 Jul 2008

Electronic form version 1.4