

Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Stability studies of the NSTX Microtearing Mode J.A. BAUMGAERTEL¹, M.H. REDI, R.V. BUDNY, G. REWOLDT, PPPL, W. DORLAND, U. Md. — Insight into plasma microturbulence and transport is being sought using linear simulations of drift waves on the National Spherical Torus Experiment (NSTX). Microtearing may cause high electron thermal conductivity and high heat transport. Marginal stability of the microtearing mode is investigated for conditions at mid-radius in a high density NSTX H-mode plasma. The microtearing mode is driven by the electron temperature gradient, and is known to be mediated by plasma beta, magnetic shear [1], and ion collisions [2]. Based on input files for the parallel code GS2, produced by TRXPL following TRANSP analysis, the variability of mode growth rates is examined as functions of electron density and temperature (thus varying plasma resistivity) and collisionalities. A beta scan of the microtearing instability is planned. [1] M. H. Redi, et al. Proceedings of EPS, Taragona, Spain, 2005 [2] M. H. Redi, et al. Proceedings of EPS, St. Petersburg, RU, 2003

¹Science Undergraduate Laboratory Intern (University of Washington), supported by U. S. DOE contract number DE-AC02-76CH03073

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Date submitted: 25 Jul 2005

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