

Quiet periods, zonal flows, and blob dynamics in the edge turbulence of NSTX

S.J. Zweben¹, R.J. Maqueda¹, D.A. D'Ippolito¹, R. Hager², K. Hallatschek², S.M. Kaye¹,
T. Munsat³, J.R. Myra¹, F.M. Poli⁴, A.L. Roquemore¹, D.A. Russell¹, Y. Sechrest³, D.P. Stotler¹

Princeton Plasma Physics Laboratory, Princeton, NJ 08540 ; ¹Lodestar Research, Boulder Co 80309

²Max-Planck-Institute for Plasma Physics, Garching, Germany ; ³Univ. Colorado, Boulder CO 80309

⁴University of Warwick, Coventry CV4 7AL, UK

- Observation of quiet periods and connection with zonal flows (sub. to PoP 4/10)
(~ 3 KHz quiet periods in edge correlated with poloidal flow changes)
- Comparison of flows with theory of GAMs (IPP) and SOLT (Lodestar) for NSTX
(frequency spectrum, radial distribution, scaling with Te+Ti, B, etc)
- Relationship of edge zonal flows to blob creation and radial propagation
(relation to analytic blob theory and SOL modeling in SOLT)
- Search for the trigger of the L-H transition in turbulence flow shear
(local shear calculation, nonlinear wavelet bicoherence)