

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Source and effects of turbulence and intermittent events in the scrape-off layer of NSTX¹ R.J. MAQUEDA, S.J. ZWEBEN, E.D. FREDRICKSON, PPPL, J.R. MYRA, D.A. RUSSELL, D.A. D'IPPOLITO, Lodestar Res. Corp., J.-W. AHN, A. MCLEAN, R. MAINGI, ORNL, NSTX TEAM — The gas puff imaging (GPI) diagnostic in NSTX is used to study the edge turbulence and intermittency present in the edge and scrape-off layer during H-mode discharges. Low power (and Ohmic) H-modes have quiescent edges with a low level of turbulence and intermittent blobs, while H-modes with strong auxiliary heating power exhibit intense edge activity. The turbulence and blob generation are studied in terms of global discharge parameters, edge profiles, and MHD activity. The possible contribution of enhanced cross-field transport due to the edge turbulence to the thermal scrape-off layer width is evaluated by comparing the outboard midplane GPI measurements with the heat deposition profiles on the divertor target plates measured by an IR imaging system. These results are also compared to ongoing modeling using the 2-D scrape-off layer turbulence code SOLT (Lodestar).

¹Supported by US DOE under grant DE-AC02-09CH11466.

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Date submitted: 19 Jul 2010

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