

Abstract Submitted  
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**Blob Structure and Motion in the Edge of NSTX**<sup>1</sup> STEWART ZWEBEN, Princeton Plasma Physics Laboratory, JAMES MYRA, Lodestar Research, WILLIAM DAVIS, Princeton Plasma Physics Laboratory, DANIEL D'IPPOLITO, DAVID RUSSELL, Lodestar Research — The structure and motion of discrete plasma blobs (a.k.a. filaments) in the edge and scrape-off layer (SOL) of NSTX is studied for representative Ohmic and H-mode discharges. Individual blobs were tracked in the radial vs. poloidal plane using data from the gas puff imaging (GPI) diagnostic at 400,000 frames/sec. A database of blob amplitude, size, ellipticity, tilt, and velocity was obtained for about 45,000 blobs. The blob velocities are compared with theoretical estimates and analytic blob models [1], and the blob shapes are compared with the edge and SOL flow shear [2]. Empirical relationships between various blob properties will be described, e.g. radial speed vs. amplitude, tilt vs. ellipticity, etc. Limitations of the blob tracking algorithm will also be discussed.

[1] D.A. D'Ippolito et al, Phys. Plasmas 18, 060501 (2011).

[2] J.R. Myra et al Nucl. Fusion 53, 073013 (2013).

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