

Abstract Submitted
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Turbulent filaments on the divertor target plates of NSTX¹ R.J. MAQUEDA, Nova Photonics, Inc., S.J. ZWEBEN, J. KALLMAN, PPPL, C.E. BUSH, ORNL, NSTX TEAM — Fine structured filaments are seen on the lower divertor target plates of NSTX during H-mode discharges. These filaments, not associated with edge localized modes, correspond to the footprints of the turbulent blobs seen near the midplane of the device with multiple diagnostics. The fluctuation level of the neutral lithium light observed and the skewness and kurtosis of its probability distribution function have similar characteristics than midplane blobs: increasing with increasing radii outside the outer strike point (separatrix). In addition, their toroidal and radial movement agrees with the typical movement of blobs at the midplane. Furthermore, with the appropriate magnetic topology, i.e. mapping between the portion of the target plates being observed into the field of view of the midplane gas puff imaging diagnostic, very good correlation is observed between the midplane blobs and these divertor filaments. The existence of “magnetic shear disconnection” due to the lower X-point, as proposed by Cohen and Ryutov [Nucl. Fusion 37, p. 621, 1997], is analyzed from the measurements obtained.

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