

Abstract Submitted  
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**Plasma Edge Turbulence Analysis from the Gas Puff Imaging Diagnostic on a Spherical Torus**<sup>1</sup> AMELIA REILLY, Lafayette College, STEWART ZWEBEN, Princeton Plasma Physics Lab, NATIONAL SPHERICAL TORUS EXPERIMENT (NSTX) COLLABORATION — The National Spherical Torus Experiment (NSTX) is aimed at testing the principles of plasma confinement in a more spherically shaped tokamak in order to create a clean energy alternative. This project focuses on calculating the frequency spectrum of edge turbulence in NSTX. This data came from the gas puff imaging diagnostic which makes a 2-D image of the density fluctuation at the edge. Using this data, a spectrum was calculated using the fast Fourier transform function in IDL. The result is a broad spectrum from approximately 1 to 70 KHz. This demonstrates the turbulent nature of these fluctuations. Edge turbulence is relevant in determining the particle and energy confinement and the plasma-wall interactions in both present and future magnetic fusion devices such as the International Thermonuclear Experimental Reactor (ITER).

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