

Abstract Submitted  
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**Validation of DEGAS 2 with NSTX Gas Puff Imaging Experiments**<sup>1</sup> D.P. STOTLER, B. LEBLANC, S.J. ZWEBEN, Princeton Plasma Physics Lab, R.J. MAQUEDA, Nova Photonics, J. BOEDO, UCSD — The Gas Puff Imaging (GPI) diagnostic operated on NSTX uses a small puff of neutral gas at the edge of the torus to allow plasma fluctuations to be visualized and recorded with a fast camera. We will describe progress made towards validation of the DEGAS 2 neutral transport code against GPI experiments carried out during the 2004 NSTX run campaign. Rigorous geometric calibration of the GPI camera prior to and during these experiments resolved a previously noted misalignment of the simulated and observed clouds<sup>2</sup>. A discrepancy in the width of the simulated and observed clouds was eliminated once the nonlinear response of the GPI camera was taken into account. The resulting simulation cloud widths and peak locations then agreed to within the error bars associated with the GPI camera's geometric calibration and the Thomson scattering data used to provide the plasma density and temperature.

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<sup>2</sup>D. P. Stotler et al., *Contrib. Plasma Phys.* **44**, 294 (2004).

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