Abstract Submitted
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Gas puff imaging diagnostic on NSTX-U[1] S.J. ZWEBEN, PPPL, F. SCOTTI, LLNL, D.L. STOTLER, A. DIALLO, N. MANDELL, PPPL, J.L. TERRY, W. HAN, MIT — The first results and plans for the gas puff imaging (GPI) diagnostic on NSTX-U will be described. The GPI optical efficiency has been improved by about x10 using a new fiber bundle and interference filter, and the new optics has a zoom lens which can potentially resolve turbulence below the ion gyro-radius scale. Experiments are planned to study high-k edge turbulence, correlations of edge turbulence with the SOL heat flux width, and the trigger mechanism of the L-H transition. A second fast camera is planned to view the GPI gas cloud from across the machine, which can potentially measure the field line pitch by simultaneously viewing individual field-aligned blob filaments in the radial vs. poloidal (GPI) and toroidal vs. poloidal (second camera) directions. An incoming collaboration from MIT will bring a 9x10 pixel APD-based detector array from Alcator C-Mod to NSTX-U, initially for faster and more sensitive imaging of the existing GPI gas puff. New results and further diagnostic plans will be described.

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