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Reduced-model (SOLT) validation from comparisons with GPI data on NSTX[1] D.A. RUSSELL, D.A. D'IPPOLITO, J.R. MYRA, Lodestar Research Corporation, R. MAQUEDA, Nova Photonics, T.L. MUNSAT, U. of Colorado, D.P. STOTLER, S.J. ZWEBEN, PPPL, and the NSTX Team. — We model the evolution of vorticity, density, temperature and zonal fluid momentum in the outboard midplane of a tokamak with our SOLT code. Our edge region supports the electron drift wave instability, while sheath losses are isolated in the SOL. Curvature- and grad-B-driven charge separation are included everywhere, enabling blob transport of fluctuations from the edge into the SOL. Several features of boundary turbulence seen in gas-puff imaging (GPI) diagnostics on NSTX are compared with the corresponding *synthetic* GPI diagnostics of the SOLT simulations, including distributions of intensity fluctuations (mean and median intensity vs. distance from the separatrix) and of blob size. The accuracy of inferring radial transport velocities directly from the GPI data is determined by comparing blob radial velocities computed from the motion of GPI images to the underlying ExB convecting velocities from the simulations.

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