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Direct Comparison of GPI and BES measurements of Edge Fluctuations in NSTX Y. SECHREST, T. MUNSAT, CU Boulder, D. SMITH, UW Madison, S.J. ZWEBEN, PPPL — We compare GPI and BES fluctuation measurements of NSTX edge plasmas, and examine the local effects of the GPI neutral deuterium puff on BES during MHD-quiescent H-mode plasmas without large ELMs. The GPI and BES views on NSTX provide partially overlapping coverage of the edge and SOL regions above the outboard midplane. The separation in the toroidal direction is 16° , and field lines passing through diagnostic views are separated by ~ 14 cm in the direction perpendicular to the magnetic field. Strong cross-correlation is observed, and strong cross-coherence is seen for frequencies between 5-15 kHz. Also, probability distribution functions of fluctuations measured ~ 3 cm inside the separatrix exhibit only minor deviations from a normal distribution for both diagnostics, and good agreement between correlation length estimates is found. While the two instruments agree closely in many respects, some discrepancies are observed. Most notably, GPI normalized fluctuation levels exceed BES levels by a factor of 5 or more. BES mean intensity is found to be sensitive to the GPI neutral gas discharge, and BES normalized fluctuation levels for frequencies between 1-10 kHz are observed to increase during the GPI puff.

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