

Abstract Submitted
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Results from the NSTX MSE-CIF diagnostic HOWARD Y. YUH, Nova Photonics, Inc., F.M. LEVINTON, J.E. MENARD, PPPL — A twelve channel Collisionally-Induced Fluorescence Motional Stark Effect diagnostic, covering the plasma minor radius on the outboard side, is routinely operated for the primary purpose of providing internal magnetic pitch angle measurements for equilibrium reconstruction. While the NSTX MSE-CIF requires the use of novel high-throughput, narrow bandpass (0.07 nm) Lyot filters to operate at low magnetic field (0.3-0.55T), a traditional PEM-based polarimeter is used to make the angular measurement. The polarimeter is calibrated by reconciling MSE measured angles with magnetic reconstructions during beam injection into gas-fill-torus with vacuum fields. It has recently been suggested that fast ions resulting from ionization of the beam neutrals with the fill gas may contaminate the measured angle by emitting additional Balmer-alpha after re-neutralizing via charge-exchange. Results from 3D simulations of this widely used MSE calibration technique from several machine geometries, including NSTX, C-Mod, and ITER will be presented. Highlights from MSE results for the 2006 NSTX run campaign will also be presented. Supported by DOE contracts DE-FG02-99ER54520 and DE-AC02-76CH03073.

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