Abstract Submitted
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Improvements to the MST Thomson Scattering Diagnostic[1] D.T. ADAMS, M.T. BORCHARDT, D.J. DEN HARTOG, D.J. HOLLY, T. KILE, S.Z. KUBALA, C.M. JACOBSON, M.A. THOMAS, J.P. WALLACE, W.C. YOUNG, Univ of Wisconsin, Madison, MST THOMSON SCATTERING TEAM — Multiple upgrades to the MST Thomson Scattering diagnostic have been implemented to expand capabilities of the system. In the past, stray laser light prevented electron density measurements everywhere and temperature measurements for -z/a >0.75. To mitigate stray light, a new laser beamline is being commissioned that includes a longer entrance flight tube, close-fitting apertures, and baffles. A polarizer has been added to the collection optics to further reduce stray light. An absolute density calibration using Rayleigh scattering in argon will be performed. An insertable integrating sphere will provide a full-system spectral calibration as well as maps optical fibers to machine coordinates. Reduced transmission of the collection optics due to coatings from plasma-surface interactions is regularly monitored to inform timely replacements of the first lens. Long-wavelength filters have been installed to better characterize non-Maxwellian electron distribution features. Previous work has identified residual photons not described by a Maxwellian distribution during m=0 magnetic bursts. Further effort to characterize the distribution function will be described.

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