

Abstract Submitted
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Commissioning of Thomson Scattering on the Pegasus Toroidal Experiment¹ D.J. SCHLOSSBERG, R.J. FONCK, L.M. PEGUERO, G.R. WINZ, University of Wisconsin-Madison — A new multipoint Thomson scattering diagnostic has been installed on the PEGASUS Toroidal Experiment. It employs a frequency-doubled Nd:YAG laser ($\lambda_0 = 532$ nm) and spectrometers using volume phase holographic gratings and gated, intensified CCD cameras. Spectral, temporal and intensity calibrations of the spectrometer systems were conducted. Sources of laser energy loss were identified and reduced, beam termination was optimized to minimize reflections during collection time, and inter-shot alignment monitoring was installed. Rayleigh and Raman calibration efforts revealed significant stray light from in-vessel reflections; hence, a vacuum-compatible optical baffling system was designed, fabricated, and is being installed. Operation of the diagnostic will support characterization of helicity dissipation mechanisms and confinement scaling during local DC helicity injection startup on PEGASUS. Additionally, H-mode temperature and density profiles will be obtained to support equilibrium reconstructions and stability studies of ELMs in the H-mode plasma edge. Initial measurements will be conducted with an 8-spatial channel array; expansion to 24 channels is in progress.

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