

Abstract Submitted  
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**Monitoring of spectral emissions using the Compact Spectrometer Array diagnostic on NSTX**<sup>1</sup> TIMOTHY DEHAAS, University of Rochester, ADAM MCLEAN, Oak Ridge National Laboratory, OAK RIDGE NATIONAL LABORATORY TEAM<sup>2</sup> — An array of four high-speed (integration time 1 ms or more), medium resolution (2048 pixel CCD, 0.10 nm/pixel dispersion, 0.43 nm optical resolution), broadband (370-590 nm optical coverage), miniature (0.1 m focal length, f/4 symmetrical crossed Czerny-Turner design) spectrometers have been installed on NSTX in a new diagnostic called the Compact Spectrometer Array (CSA). A C++-based program was also developed to operate multiple spectrometers simultaneously in concert with the NSTX discharge clock, and automatically upload data into the MDSplus database. This diagnostic complements existing high resolution spectrometers on NSTX in spectral coverage and speed, and are an essential tool in understanding how plasma interacts with the walls of the NSTX fusion device. Analysis of spectra from the CSA viewing the divertor targets of a variety of plasma configurations are presented along with interpretation of particle flux and erosion characteristics using measured discharge parameters and available atomic databases.

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<sup>2</sup>at PPPL Working on NSTX

Timothy DeHaas  
University of Rochester

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