

Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

The real time multi point Thomson scattering diagnostic at NSTX-U¹ FLORIAN LAGGNER, EGEMEN KOLEMEN, Princeton University, Princeton, New Jersey 08544, AHMED DIALLO, BENOIT LEBLANC, ROMAN ROZENBLAT, GREG TCHILINGUIRIAN, Princeton Plasma Physics Laboratory, Princeton, New Jersey 08543, NSTX-U TEAM TEAM — This contribution presents the upgrade of the multi point Thomson scattering (MPTS) diagnostic for real time application. As a key diagnostic at NSTX-U, the MPTS diagnostic simultaneously measures the electron density (n_e) and electron temperature (T_e) profiles of a plasma discharge. Therefore, this powerful diagnostic can directly access the electron pressure of the plasma. Currently, only post-discharge evaluation of the data is available, however, since the plasma pressure is one important drive for instabilities, real time measurements of this quantities would be beneficial for plasma control. In a first step, ten MPTS channels were equipped with real time electronics, which improve the data acquisition rate by five orders of magnitude. The commissioning of the system is ongoing and first benchmarks of the real time evaluation routines against the standard, post-discharge evaluation show promising results: The T_e as well as n_e profiles of both types of analyses agree within their uncertainties.

¹This work was supported by the US Department of Energy under DE-SC0015878 and DE-SC0015480

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Date submitted: 14 Jul 2017

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