Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Spectroscopic diagnostics for upper divertor and central stack on NSTX-U[1] KAIFU GAN, UTK, ALESSANDRO BORTOLON, abortolo@pppl.gov, TRAVIS GRAY, JOON-WOOK AHN, ORNL, BRIAN WIRTH, UTK, RAJESH MAINGI, PPPL — NSTX has demonstrated a number of discharge characteristics that improved with increasing lithium coatings, all with nominal thickness >>ion implantation depth [1]. The asymmetries in the lithium coating and erosion and re-deposition of lithium in other regions possibly explain this phenomenon. In order to investigate the role of these mechanisms, new high resolution UV-VIS-NIR spectroscopic diagnostics are installed in NSTX-U to monitor the previously uncovered upper divertor and central stack region. The diagnostics consist of a high speed ProEM-HS 512 camera, an IsoPlane SCT320 spectrometer and 32 sightlines: 16 sightlines on the upper divertor and 16 sightlines on the central stack. The ratio of lithium emission to carbon emission as a function of pre-discharge lithium deposition will be measured in these two region to evaluate the hypothesis. The diagnostics can be also used to measure impurity influx and ion temperature. First diagnostics results from the 2015 NSTX-U campaign will be presented.

[1] R. Maingi *et al.*, Phys. Rev. Lett. 107, 145004 (2011).

[1]This work was supported by DoE contract: DE-SC0008309.

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Date submitted: 24 Jul 2015 Electronic form version 1.4