Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Upgrade of KSTAR MSE with background polychrometers[1] JINSEOK KO, National Fusion Research Institute, STEVE SCOTT, Princeton Plasma Physics Laboratory, FRED LEVINTON, Nova Photonics — The 25-sightline Motional Stark Effect (MSE) diagnostic system equipped with the background polychrometer (BP) detectors have been installed to the KSTAR tokamak to simultaneously measure and subtract out the polarized background light in the MSE signals. A series of calibration activities performed for both the conventional (single-detector) MSE and the new MSE-BP systems include the in-vessel absolute polarization angle calibrations, beam-into-gas calibrations, and plasma-sweeping calibrations. Reliable magnetic equilbrium reconstructions with low systematic errors and quantitative estimates on the effect of polarized background noises in the carbon wall are expected from operating both MSE systems. A new real-time MSE data analysis technique under development will be discussed.

[1]This work is supported by Korean Ministry of Science and ICT and by US DoE contracts DE-SC0016409 and DE-AC02-09CH11466 and grant DE-SC0016614.

Jinseok Ko
National Fusion Research Institute

Date submitted: 28 Jun 2019 Electronic form version 1.4