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Measurements of Low Intensity W I Light from WEST Tokamak using Spectrally Separate Narrow Band Pass Filters[1] A.L. NEFF, ORISE and ORNL, E.A. UNTERBERG, ORNL, C.C. KLEPPER, ORNL and CEA, IRFM, Framce, O. MEYER, CEA, IRFM, France, K. DAVDA, UTK, Bredesen Center, D.T. FEHLING, ORNL, J.Y. PASCAL, CEA, IRFM, France, J.H. HARRIS, ORNL, THE WEST TEAM — Within the core of a magnetically confined fusion plasma, impurities contribute to energy confinement losses via radiative cooling. With enough radiative cooling, the plasma will disrupt and extinguish. Due to these losses, tracking impurities is critical to furthering fusion energy science. Eroded atoms from the wall that emit photons when they become excited/ionized after interacting with the plasma are simple to measure impurities. Using spectrometers, photons are collected over a wavelength range, which limit acquisition rates. With a filterscope, the emission line is isolated from the spectra and only light from a narrow band (1-2 nm) is collected thus increasing the rate of acquisition, leading to a current max rate of 100 kHz. With a full tungsten (W) wall on WEST, the need to track W impurities is paramount. Measurements with two filters were used to confidently measure the W-I emission from 400.9 nm on WEST. One filter, centered at 400.55 nm, collects the W-I light and the other at 403.55 nm collects background continuum radiation. These signals are subtracted and calibrated to produce a photon flux. We will present the results of this staggered filter method.

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