Abstract Submitted
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An LIF Diagnostic for Measurement of the Neutral Deuterium Profile in the SOL and Pedestal of DIII-D[1] N.H. BROOKS, D.A. TAUSSIG, General Atomics, E.E. SCIME, M.E. GALANTE, West Virginia University — A two-photon absorption, laser-induced fluorescence (TALIF) diagnostic is being designed to measure the neutral deuterium profile in the plasma scrapeoff layer and pedestal, near the divertor X-point. Spatially resolved data are desired over the region $0.95-1.0$ in normalized ρ, to address how neutral ionization affects the pedestal density profile. Additionally, profile data are sought in the scrape-off layer (SOL) outside the separatrix to understand the in/out asymmetry observed in the onset of detachment. Several geometries of lasers and collection optics will be presented which permit simultaneous detection of the fluorescent signal for each firing of a pulsed, ultraviolet laser capable of 10 Hz repetition rate.

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