## Abstract Submitted for the DPP16 Meeting of The American Physical Society

Studies of short-range tungsten migration in DIII-D divertor<sup>1</sup> D.L. RUDAKOV, UCSD, P.C. STANGEBY, J.D. ELDER, UTIAS, R. DING, T. ABRAMS, ORAU, E.A. UNTERBERG, A. BRIESEMEISTER, ORNL, D. DONO-VAN, UTK, A.G. MCLEAN, LLNL, H.Y. GUO, D.M. THOMAS, GA, E. HINSON, U Wisc M, W.R. WAMPLER, J.G. WATKINS, SNL — Two toroidal rings of 5 cm wide W-coated TZM inserts were installed in the lower divertor of DIII-D. Migration of W on the graphite tile surfaces 1-6 cm radially outwards from the outermost ring was studied in a series of 23 reproducible lower single null L-mode discharges with the Outer Strike Point (OSP) placed on the ring. The discharges used 3.2 MW of NBI heating power; plasma density and electron temperature at the OSP were about $1 \times 10^{20} m^{-3}$  and 30 eV. W gross erosion rates were measured via monitoring 400.9 nm WI line and applying S/XB coefficient. W deposition was measured on a graphite DiMES sample used as a divertor collector probe. The sample featured two 1 mm wide radial inserts; one was exposed for the whole experiment, the other was exchanged every 4-8 plasma discharges. Measurements of the areal density of W on the inserts by post-mortem RBS analysis show that W deposition is largest in the area of net carbon deposition, possibly due to W re-erosion suppression by C deposits. Measured W coverage in the area of net C erosion is comparable to ERO modeling predictions.

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