Abstract Submitted
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Characterizing the DIII-D divertor conditions during the tungsten ring experiment[1] J.L. BARTON, J.G. WATKINS, SNL, H.Q. WANG, ORAU, R.E. NYGREN, SNL, A. MCLEAN, M. MAKOWSKI, LLNL, E. UNTERBERG, ORNL, D.M. THOMAS, H.Y. GUO, GA, J. GUTERL, ORAU, B. BUCHENAUER, SNL — Tungsten (W) is the leading divertor material in tokamaks, but the core W impurity fraction must be kept below 5×10^{-5} in a reactor. The DIII-D tokamak, having all graphite PFCs, has done a series of experiments with two W-coated molybdenum rings in the lower divertor to track W migration after plasma exposure. We characterize the divertor plasma conditions at the DIII-D target plate in L- and ELMing H-mode, and ELM suppressed plasmas. We will present data from an array of Langmuir probes in the divertor and divertor Thomson-scattering. We also compare the heat flux from fast thermocouples (7.5 mm below the surface of the metal tile inserts) and IRTV heat flux profiles from graphite tiles. The plasma conditions will be used to benchmark ERO modeling to aid in understanding the migration of sputtered W onto other plasma facing surfaces and will be compared to post exposure W distribution measured on the graphite tiles.

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J.L. Barton
SNL

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