

Abstract Submitted
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Detachment experiments in new DIII-D upper divertor¹ A.L. MOSER, A.W. LEONARD, R.J. GROEBNER, H. GUO, GA, H. WANG, ORAU, J.G. WATKINS, SNL, A.G. MCLEAN, M.E. FENSTERMACHER, LLNL, M.W. SHAFER, A.R. BRIESEMEISTER, ORNL, E.T. HINSON, UWM — Installation of the Small Angle Slot (SAS) in the upper divertor of DIII-D enables new studies of the effect of target and baffle geometry on divertor detachment. This structure provides a more-closed upper divertor as well as the SAS divertor itself. Initial SAS experiment results indicate that divertor detachment occurs at a lower line-averaged density than in the more-open, lower single null divertor configurations on DIII-D. In contrast, the increased divertor closure of the new installation did not reduce the upstream density required for detachment beyond that achieved with the previous upper divertor structure. Particle pumping in the upper divertor structure is found to produce a $\approx 10\%$ reduction in the pedestal density required for detachment compared to the case with no pumping. Comparisons focus on both the onset of detachment (measured by in-target Langmuir probes) as a function of upstream density, as well as the effect of the new divertor configurations on pedestal density profiles.

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