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Comparison of Open and Closed Divertor Conditions

in DIII-D¹ J.G. WATKINS, Sandia National Laboratories, D.N. HILL, S.L. ALLEN, Lawrence Livermore National Laboratory, R. MAINGI, Oak Ridge National Laboratory, R.A. MOYER, R. LEHMER, J.A. BOEDO, UC, San Diego, C.M. GREENFIELD, General Atomics — This paper compares recent closed divertor operation of DIII-D with previous open divertor operation using Langmuir probe measurements of density, temperature, and particle flux. New upper divertor target plate Langmuir probes provide the only measurements of the upper divertor plasma parameters in the new closed geometry. Adequate density control, *i.e.* control of n_e/I_p , has been demonstrated in both lower (open) and upper (closed) cases however preliminary results indicate that upper divertor operation is 20% less efficient at particle removal because of higher flux expansion at the target plate. Higher, more peaked target plate particle flux profiles have been observed, however, with the grad B drift direction toward the plate. Recent results will be presented as well as comparisons at different values of core/edge density and neutral beam injected power.

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J.G. Watkins
watkins@gav.gat.com
Sandia National Laboratories, Albuquerque

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