Abstract Submitted
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Identifying the Location of the Separatrix at the OMP in DIII-D Using Power Accounting[1] P.C. STANGEBY, U. Toronto — Two methods are used which employ power accounting to improve the accuracy of identifying R-sep-omp, the location of the separatrix at the outside midplane (omp). The first method uses the measured deposited power profile at the outer target as the primary input, the P-SOL-exhaust method. The other uses the measured power input to the SOL, obtained from the total heating power less the power radiated from inside the separatrix, the P-SOL-input method. The methods were applied to experimental data for 21 H-mode DIII-D discharges. High spatial resolution Thomson scattering measured profiles of between-ELM n_e and T_e were used to calculate the electron parallel conducted heat flux profile which was then matched to the measured P-SOL-exhaust and P-SOL-input by adjusting R-sep-omp relative to that of the Thomson data. The values of R-sep-omp from the 2 methods agree to within $\sim$1 mm of each other and to within $\sim$1 mm of the values given by the "standard DIII-D method" [1]. This results in only modest changes to n_e and T_e at R-sep-omp relative to the "standard" values, increasing n_e by $\sim$10% and T_e by $\sim$20%.

[1] G.D. Porter et al., Phys. Plasmas 5, 1410 (1998).

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