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Theory     Experiment

**OEDGE Assessment of Pressure and Power Balance Methods for Separatrix Identification\***, J.D. Elder, P.C. Stangeby, *University of Toronto*; A.W. Leonard, B.D. Bray, N.H. Brooks, *General Atomics*, J.A. Boedo, D.L. Rudakov *UCSD*, J.G. Watkins *Sandia National Laboratories*, E.A. Unterberg *ORNL*, C. Lasnier, *LLNL* - The OEDGE code is used to assess several methods of determining the upstream separatrix location. The inter-ELM phase of a well-diagnosed ELMing H-mode discharge is being used for this comparison. The OEDGE code utilizes 1D plasma fluid models calculated along the field lines on a 2D computational grid of a poloidal cross-section of the discharge magnetic geometry to produce a 2D model of the background plasma. Langmuir probe data at the targets are used as input to the 1D models. Additional diagnostic measurements, including Thomson scattering, reciprocating probe, divertor spectroscopy and infra-red measurements of target heat flux, may be used to further constrain the plasma background determined by OEDGE. This plasma background thus found, is then used to identify the location of the separatrix in the experimental data by comparing the upstream plasma profiles from OEDGE to the experimental measurements. The OEDGE result is then compared to the separatrix locations predicted using simple pressure balance and power balance considerations.

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