

**Abstract Submitted for the 53rd Annual Meeting  
Division of Plasma Physics  
November 14-18, 2011, Salt Lake City, Utah**

Category Number and Subject: 5.6.2. DIII-D Tokamak

Theory       Experiment       Combined/General

**Access conditions for advanced inductive scenarios,\*** G.L. Jackson, T.C. Luce, P.A. Politzer, *General Atomics*; E. Joffrin, *EFDA-JET* – Employing advanced inductive (AI) regimes in ITER requires knowledge of suitable startup trajectories to achieve stationary AI performance. As part of the International Tokamak Physics Activity (ITPA), a database of DIII-D discharges has been assembled to quantify access conditions for stable AI discharges. The ITPA goals are (1) to assemble a database of a jointly defined set of variables from several tokamaks and (2) perform similarity experiments based on analysis of that database to demonstrate AI access conditions for ITER. The DIII-D AI database now contains 77 variables from 1294 discharges. The most important parameter to predict access to stable DIII-D AI discharges is the level of auxiliary heating in the ramp-up phase, but there is little correlation with internal inductance ( $\ell_i$ ). While the current profile is important,  $\ell_i$  is not sufficiently sensitive to show the correlation in the presence of a current ramp. A complementary database has been assembled for JET AI discharges. Similarities and differences in the two machines will be reported as well as plans to merge the two databases.

\*This work supported by US DOE under DE-FC02-04ER54698.