

Abstract Submitted  
for the DPP08 Meeting of  
The American Physical Society

**Test of a Pedestal Height Model in DIII-D**<sup>1</sup> R.J. GROEBNER, P.B. SNYDER, A.W. LEONARD, T.H. OSBORNE, General Atomics — A new model of pedestal height has been tested in the DIII-D tokamak. This model, called EPED1, was used to design an experiment and to predict the pedestal height of total pressure as a function of machine control parameters. These parameters included plasma current, toroidal magnetic field, plasma shape and total plasma beta. The model successfully predicted the pressure pedestal height over more than an order of magnitude variation. The EPED1 model is based on the peeling-ballooning MHD theory, which has previously been shown to provide good predictions of the pedestal pressure when the measured pressure pedestal width was used an input to the model. The EPED1 model uses a simple scaling for the pedestal width in normalized poloidal flux,  $p_{wid} = 0.08\sqrt{\beta_{pol_{ped}}}$ . The factor of 0.08 is taken from a large database of DIII-D pedestal measurements. If this scaling works well for other machines, the EPED1 model could be used to make predictions of pedestal height in new machines, such as ITER.

<sup>1</sup>Work supported in part by the US DOE under DE-FC02-04ER54698.

R.J. Groebner  
General Atomics

Date submitted: 18 Jul 2008

Electronic form version 1.4