

**Abstract Submitted for the 51st Annual Meeting
Division of Plasma Physics
November 2–6, 2009, Atlanta, Georgia**

Further Development of a Predictive Pedestal Model,* P.B. Snyder, R.J. Groebner, A.W. Leonard, T.H. Osborne, *General Atomics*; H.R. Wilson, *U. of York* — The pressure at the top of the edge transport barrier (or “pedestal height”) strongly impacts tokamak fusion performance, and first principles prediction of the pedestal height remains an important challenge. A recently developed model, EPED1, combines a calculated peeling-ballooning stability constraint with a simple equation describing kinetic ballooning mode (KBM) onset to yield a predictive model of the pedestal height and width. The model has been successfully tested under a wide range of conditions on several tokamaks, included in a dedicated experiment where predictions were made before the experiment was conducted. Here we discuss continuing development of the model, including a more comprehensive KBM model based directly on gyrokinetic calculations, and improved treatment of diamagnetic stabilization.

*Work supported in part by the US DOE under DE-FG03-95ER54309.