

Abstract Submitted
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Further Development of a Predictive Pedestal Model¹ P.B. SNYDER, R.J. GROEBNER, A.W. LEONARD, T.H. OSBORNE, General Atomics, H.R. WILSON, University 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.

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