Abstract Submitted
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Predicting and Optimizing Pedestal Height With the EPED Model[1] P.B. SNYDER, R.J. GROEBNER, T.H. OSBORNE, General Atomics, J.W. HUGHES, Massachusetts Institute of Technology, H.R. WILSON, University of York — Fusion energy performance of tokamak plasmas is expected to scale strongly with the pressure at the top of the edge transport barrier (or "pedestal height"). The EPED model predicts pedestal height by combining calculated peeling-ballooning (PB) and kinetic ballooning mode (KBM) constraints. EPED has been successfully compared to 270 cases on five tokamaks finding ∼20% agreement with observed pedestal height. Avenues for further optimizing the pedestal height on existing devices as well as ITER are explored, including "Super H-Mode" operation. Ongoing development of the model, including direct electromagnetic gyrokinetic calculations, is also discussed, as is application of the model to edge localized mode suppressed regimes.

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