

Abstract Submitted
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Effect of anomalous transport on kinetic simulations of the H-mode pedestal G. BATEMAN, A.Y. PANKIN, A.H. KRITZ, T. RAFIQ, Lehigh U., G.Y. PARK, S. KU, C.S. CHANG, NYU Courant Institute — The MMM08 and MMM95 Multi-Mode transport models [1,2], are used to investigate the effect of anomalous transport in XGC0 gyrokinetic simulations [3] of tokamak H-mode pedestal growth. Transport models are implemented in XGC0 using the Framework for Modernization and Componentization of Fusion Modules (FMC FM). Anomalous transport is driven by steep temperature and density gradients and is suppressed by high values of flow shear in the pedestal. The radial electric field, used to calculate the flow shear rate, is computed self-consistently in the XGC0 code with the anomalous transport, Lagrangian charged particle dynamics and neutral particle effects. XGC0 simulations are used to provide insight into how thermal and particle transport, together with the sources of heat and charged particles, determine the shape and growth rate of the temperature and density profiles. [1] F.D. Halpern *et al.*, Phys. Plasmas **15** (2008) 065033; J.Weiland *et al.*, Nucl. Fusion **49** (2009) 965933; A.Kritz *et al.*, EPS (2009) [2] G. Bateman, *et al.*, Phys. Plasmas **5** (1998) 1793 [3] C.S. Chang, S. Ku, H. Weitzner, Phys. Plasmas **11** (2004) 2649

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