

Abstract Submitted
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Effect of Collisionality and Effective Charge on the H-mode Pedestal Structure in DIII-D and JET¹ M.J. LEYLAND, K.J. GIBSON, U. of York, T.H. OSBORNE, R.J. GROEBNER, P.B. SNYDER, General Atomics, M.N.A. BEURSKENS, C. GIROUD, S. SAARELMA, CCFE, X. CHEN, ORISE, R. NAZIKIAN, PPPL, DIII-D TEAM, JET TEAM — After the installation of the ITER-like-wall, the energy confinement of high triangularity D₂ fueled JET baseline plasmas was degraded by up to 40% due to a reduction in pedestal performance. This could be partially recovered by changing the collisionality (ν^*) and/or effective charge (Z_{eff}) when seeding N₂. Pedestal measurements revealed a widening of the pedestal and a variation in gradient. Comparison to EPED pedestal-model predictions highlights the potential importance of a low-Z, carbon-like, impurity at the plasma edge. We report on a dedicated DIII-D experiment that studied the role of ν^* and Z_{eff} on the pedestal structure through means of D₂-fueling, N₂-seeding and Li-dropping. Initial analysis shows with increasing D₂ fueling the pedestal does not widen and the ELM frequency increases in contrast to equivalent JET plasmas.

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