

Abstract Submitted  
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**Density profile behavior in JET and extrapolations to ITER**  
MIKHAIL MASLOV, HENRI WEISEN, CRPP, CLEMENTE ANGIONI, IPP  
Garching, JET-EFDA CONTRIBUTORS COLLABORATION<sup>1</sup> — A growing number of experiments on different tokamaks show that the neoclassical pinch and fuelling by edge neutrals or NBI is generally not able to explain the observed density profiles. Anomalous inward convection appears to be ubiquitous, leading to peaked density profiles at low collisionality in H-modes. Extrapolation to ITER conditions leads to high density peaking for the reference scenario which increases expected fusion gain from  $Q=10$  to  $Q=30$  [1,2]. A comprehensive study of JET experiments of C15-C19 campaigns (2006-2007) was done. Several hundred of density profiles in stationary H-mode phases were analyzed and the scaling law for the density peaking was derived. General agreement with the previous observations [1] was found as well as some new features arise. Effective collisionality still has the highest correlation with density peaking but on the new data one can see a dramatic change of the density profile behavior around  $\nu_{eff} \sim 0.4$ . Density peaking increases much faster at lower collisionalities and li correlation appears also. [1] H. Weisen et al. 21st IAEA FEC, Chengdu, China [2] V. Mukhovatov et al. Nucl. Fus.43 (2003)942

<sup>1</sup>See the Appendix of M.L.Watkins et al., Fusion Energy 2006 (Proc. 21st Int. Conf. Chengdu, 2006) IAEA, (2006)

Mikhail Maslov  
CRPP

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