Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Development of Benign Elm Scenarios at JET THIERRY LOARER, Assocation EURATOM-CEA, R.J. BUTTERY, P.J. LOMAS, I. NUNES, G. SAIBENE, JET-EFDA COLLABORATION — The development of a Q=10 baseline regime with tolerable ELMs remains a challenging issue for ITER. To address this, the JET programme has focused on the exploration of intrinsically benign ELM plasma scenarios. At high shape and fuelling type I ELM frequencies are strongly reduced by inter-ELM turbulence. Similar turbulence can lead to a fully stationary pedestal at high collisionality in near double-null (ASDEX Upgrade identity) shapes. At higher β_p and q_{95} very small ELMs ("Grassy") are seen. JET has now been upgraded with a new divertor to allow more highly shaped plasmas. Preliminary results in the new ITER-like shape show a strong sensitivity of ELM type and confinement to X point location. Further studies using the new divertor to access quasi double-null configurations with increased lower triangularity and decreased upper triangularity have produced the first fully stationary type-II-like regimes with good confinement. Work is now under way to resolve the detailed access requirements and behaviour of benign ELM regimes, testing in particular the role of double-null proximity, collisionality, β_p and q_{95}. Full results will be reported at conference.

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Date submitted: 22 Jul 2006 Electronic form version 1.4