Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Modeling of the 2007 JET ^{13}C migration experiments J.D. STRACHAN, PPPL, Princeton University, J. LIKONEN, A. HAKOLA, J.P. COAD, A. WIDDOWSON, S. KOIVURANTA, D.E. HOLE, M. RUBEL, Culham Science Centre, UK, JET-EFDA COLLABORATION — Using the last run day of the 2007 JET experimental campaign, $^{13}CH_4$ was introduced repeatedly from the vessel top into a single plasma type (H-mode, I_p= 1.6 MA, B_t= 1.6 T). Similar experiments were performed in 2001 (vessel top into L-Mode) and 2004 (outer divertor into H-Mode). Divertor and wall tiles were removed and been analysed using secondary ion mass spectrometry (SIMS) and Rutherford backscattering (RBS) to determine the ^{13}C migration. ^{13}C was observed to migrate both to the inner (largest deposit), outer divertor (less) , and the floor tiles (least). This paper reports the EDGE2D/NIMBUS based modelling of the carbon migration. The emphasis is on the comparison of the 2007 results with the 2001 results where both injections were from the machine top but ELMs were present in 2007 but not present in 2001. The ELMs seemed to cause more ^{13}C re-erosion near the inner strike point. Also of interest is the difference in the Private Flux Region deposits where the changes in divertor geometry between 2004 and 2007 caused differences in the deposits. In 2007, the tilting of the load bearing tile caused regions of the PFR to be shadowed from the inner strike point which were not shadowed in 2004, indicating ^{13}C neutrals originated from the OSP.

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Date submitted: 17 Jul 2010 Electronic form version 1.4