OEDGE Code Interpretation of Carbon Co-deposition Experiments in DIII-D L- and H-Mode Plasmas,* J.D. Elder, A.G. McLean, P.C. Stangeby, U. Toronto, S.L. Allen, M.E. Fenstermacher, M. Groth, LLNL, B.D. Bray, N.H. Brooks, W.P. West, GA, D.L. Rudakov, J.A. Boedo, UCSD, W.R. Wampler, J.G. Watkins, SNL, D.G. Whyte, U. Wisc., G. Wang, UCLA, W.M. Solomon, PPPL — A carbon-13 tracer experiment in DIII-D involved injection of C\textsuperscript{13}-methane into ITER-like partially detached ELMy H-mode plasmas, as a follow-up to an earlier L-mode experiment. Experimental details are given by McLean et al, this meeting. For the L-mode experiments, the OEDGE interpretive code is able to successfully replicate the C\textsuperscript{13}-deposition pattern, edge spectroscopic emissions and the increment to the C-ion density in the main plasma. A fast (M\approx 0.5) edge flow toward the inner divertor and no erosion of the C\textsuperscript{13}-deposits was assumed in L-mode. OEDGE will be applied to the data set for the H-mode experiments; ELMs and \approx 10X greater input power make redistribution of the C\textsuperscript{13}-deposits by plasma erosion more likely. OEDGE modeling will address the time-varying plasma conditions and carbon re-erosion.

*Work supported by US DOE under DE-FC02-04ER54698 and DE-AC04-94AL85000.