Abstract Submitted
for the DPP99 Meeting of
The American Physical Society

Sorting Category: 5.1.1.2 (Experimental)

Long-term Reduction of Divertor Carbon Sources in DIII-D[1] D.G. WHYTE, R. DOERNER, University of California, San Diego, W.P. WEST, R.L. LEE, N.H. BROOKS, General Atomics, R.C. ISLER, M.R. WADE, Oak Ridge National Laboratory, G.D. PORTER, Lawrence Livermore National Laboratory — The long-term evolution of carbon sputtering from the DIII–D tokamaks graphite-covered lower divertor is studied using *in-situ* spectroscopy and *ex-situ* laboratory erosion yield measurements. The total effective yield and, hence, the impurity source amplitude has gradually decreased a factor > 4 since installation of the tiles in 1992. This reduction is likely caused by the $\sim$ 20-fold reduction in the chemical erosion yield of the graphite, the effect of > 30 applied boronizations. Despite this great success in wall conditioning, there has been no concomitant decrease in the core plasma carbon contamination during the same period. Two explanations are being explored: (1) the nature of parallel impurity transport decouples the wall source and content, and (2) the first wall is the principal source of carbon in the core.

[1]Supported by U.S. DOE Grant DE-FG03-95ER-54294 and Contracts DE-AC03-99ER54463, DE-AC05-96OR22464, and W-7405-ENG-48.

☐ Prefer Oral Session
☒ Prefer Poster Session

D.G. Whyte
whyte@gav.gat.com
University of California, San Diego

Special instructions: DIII-D Poster Session 2, immediately following RJ Colchin

Date printed: July 16, 1999 Electronic form version 1.4