

Abstract Submitted
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Impurity Transport in the C-2W Experiment DANIEL SHEFTMAN, TAE Technologies, Inc., TAE TEAM TEAM — In TAE Technologies' current experimental device, C-2W (also called “Norman”) [1], record breaking, advanced beam-driven field reversed configuration (FRC) plasmas are produced and sustained in steady state utilizing variable energy neutral beams, advanced divertors, end bias electrodes, and an active plasma control system. Reduction of impurity influx from material surfaces is essential to achieve high temperatures in fusion experiments. In the C-2W device, the quartz tube of the formation section and the metal surfaces in the inner divertor may both act as sources of oxygen impurities. Here we investigate the transport of oxygen with spectroscopic and fast imaging measurements. Density profiles of oxygen for different charge states in the confinement vessel and inner divertor are presented. In addition, a method for determining the particle confinement time from impurity spectral line ratios is proposed and evaluated. 1 H. Gota et al, Nucl. Fusion 59, 112009 (2019).

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