

Abstract Submitted  
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**OEDGE Modeling of Detachment Threshold Experiments on DIII-D**<sup>1</sup> J.D. ELDER, P.C. STANGEBY, U. Toronto, A.G. MCLEAN, LLNL, A.W. LEONARD, GA, J.G. WATKINS, SNL — A detachment threshold experiment was performed on DIII-D in which the divertor plasma transitioned from attached to weakly detached at the strike point with minimal changes in upstream parameters. The value of  $T_e$  at the outer strike point measured by Thomson scattering decreased from  $\sim 10\text{eV}$  (attached) to  $\sim 2\text{ eV}$  (weakly detached). Both the Langmuir probes and the divertor Thomson diagnostics recorded increases in the particle flux on the order of a factor of two between these divertor conditions. OEDGE is used to model both of these plasma regimes for both L-mode and H-mode discharges. The behaviour of molecular hydrogen is assessed using OEDGE and possible roles of hydrogen molecules in the detachment process are examined.

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