

Abstract Submitted  
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**Recycling Coefficient Calculation for Discharges with Lithium Plasma-facing Surfaces in CDX-U**<sup>1</sup> T. GRAY, R. KAITA, R. MAJESKI, J. SPALETA, D. STOTLER, J. TIMBERLAKE, L. ZAKHAROV, Princeton Plasma Physics Lab — Recent experiments on the CDX-U spherical torus have successfully achieved a significant reduction in recycling with large-area liquid lithium plasma-facing surfaces. Modeling of low recycling discharges with DEGAS2, a neutral particle transport code, has been performed. Utilizing available spectroscopic data, this modeling allows a calculation of a global recycling coefficient ( $R$ ) for the low recycling discharges. The  $R$  values deduced with the modeling are used with  $\tau_p^*$  measurements to obtain estimates for the particle confinement time  $\tau_p$ . Measurements of  $\tau_p^*$  were performed by using transient gas puffing and observing the time dependence of the plasma density with microwave interferometry. An analysis of the impact of light reflections on the spectroscopic measurements will also be presented.

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