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**Impact of vessel-wall-coatings on the edge neutral density of a field-reversed configuration plasma**

MATTHEW THOMPSON, BIHE DENG, JON DOUGLASS, DEEPAK GUPTA, JOHN KINLEY, ALES NECAS, XUAN SUN, ALAN VAN DRIE, MAX WYMAN, Tri Alpha Energy, Inc., THE TAE TEAM

— In any magnetic plasma confinement device, it is advantageous to limit hot-ion loss through charge-exchange with cold neutral gas by minimizing the gas density near the plasma. A system of titanium and lithium evaporators has been used extensively in the C-2 field-reversed configuration experiment [1] to coat the vessel walls with neutral-gas-absorbing film. The effectiveness of these coatings at reducing the recycling of neutrals from the wall, and hence the neutral particle density near the plasma, is evaluated using multiple diagnostic systems and analyses. Chief among these is the reconstruction of time-resolved neutral particle density profiles from measurements of  $D_\alpha$  radiation, which show a significant reduction in gas densities when a fresh coating is applied. Simulations of neutral gas behavior with the Monte Carlo code DEGAS2 agree well with the measured neutral particle density profiles.

[1] M. W. Binderbauer *et al.*, Phys. Rev. Lett. **105**, 045003 (2010)

Matthew Thompson  
Tri Alpha Energy, Inc.

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