

Abstract Submitted
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Dynamic Separatrix Control in C-2U E. GARATE, I. ALLFREY, S. PUTVINSKI, G. SNITCHLER, E. TRASK, J. SCHROEDER, J. ROMERO, Tri Alpha Energy, AND THE TAE TEAM — C-2U's advanced beam driven field reversed configuration (FRC) routinely achieves lifetimes exceeding the magnetic diffusion time of the confinement vessel, which is about 5 ms. In order to supplement the flux conserving properties of the walls, and to allow plasma shaping and separatrix control along the FRC length, we have implemented a set of six independent auxiliary coils on C-2U. The coils are external to the confinement vessel and can be energized at any time during the FRC discharge. Current in the coils can either increase or decrease the magnetic field pressure along the separatrix length, allowing for a variety of different external pressure profiles. Recent experimental results indicate that separatrix control by suitable programming of the auxiliary coil system can lead to increased lifetimes for C-2U FRC's. The auxiliary coil system, experimental results and a discussion of the possible benefits of separatrix control on stability and transport will be discussed.

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