

Abstract Submitted
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FRC Lifetime Studies for the Field Reversed Configuration Heating Experiment CHRIS GRABOWSKI, JAMES DEGNAN, DAVID AMDAHL, RACHEL DELANEY, MATTHEW DOMONKOS, MARK LEHR, RICARDO MAGALLANES, RANDY ROBINSON, EDWARD RUDEN, WILLIAM WHITE, Air Force Research Laboratory, Directed Energy Directorate, DON GALE, MARK KOSTORA, JOHN MCCULLOUGH, WAYNE SOMMARS, Science Applications International Corporation, MICHAEL FRESE, SHERRY FRESE, FRANK CAMACHO, SEAN COFFEY, NumerEx, THOMAS INTRATOR, GLEN WURDEN, Los Alamos National Laboratory, RICHARD SIEMON, STEPHAN FUELLING, BRUNO BAUER, University of Nevada, Reno, ALAN LYNN, NORMAN RODERICK, University of New Mexico — The goal of the Field-Reversed Configuration Heating Experiment (FRCHX) is to demonstrate magnetized plasma compression. A requirement is that the trapped flux inside the FRC must persist long enough for the compression process to be completed, which is approximately 20 microseconds. Lifetime measurements of the FRCs formed for FRCHX show lifetimes of only 7 ~ 9 microseconds once the FRC has entered the capture region. Results from recent FRCHX experiments will be presented, and possible reasons for the lifetime limitations will be discussed along with several approaches for overcoming these limitations. This work is supported by DOE-OFES.

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