

Abstract Submitted
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FRC Formation and Stability in an Accelerated Plasma Flow ALFONSO G. TARDITI, University of Houston - Clear Lake — Electric propulsion concepts based on FRC's and acceleration of compact tori (CT) have been considered in the past [*e.g.* 1-5], particularly due to FRC's attractive properties in term of stability and low beta. Unlike previous CT concepts, the present study focuses on the formation of FRC plasmoids in an accelerated plasma column [6]. The 3D fluid code *NIMROD* [7] is used to explore the formation of an FRC from a plasma accelerated through a magnetic nozzle, effectively producing a detachment of the plasma from the guiding magnetic field. The stability of the detached FRC and the energy balance are investigated. **References:** [1] K Miller, APS-DPP Conf. New Orleans (LA) 1998, Bull. APS (1998). [2] M.J. Schaffer, Proc. NASA Advanced Propulsion Workshop in Fusion Propulsion, Huntsville, AL, Nov. 2000. [3] Slough, J., AIAA paper 2001-3674 (2001). [4] S. J. Koelfgen, AIAA paper 2003-4992 (2003). [5] T. Weber, this conference. [6] A. G. Tarditi, Int. Sherwood Fus. Theory Conf., Stateline NV, April 2005. [7] C. R. Sovinec et al., J. Comput. Phys. 195, 355 (2004).

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