

Self-Similar Adiabatic Compression of Highly-Elongated Field Reversed Configurations

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Abstract

A theoretical model of an elongated field reversed configuration (FRC) adiabatically compressed to high density by an imploding liner is presented. Compression is assumed to be self-similar, equal along length and radius, and is accomplished by means of a shaped liner [D.D. Ryutov, R.P. Drake, *et al.*, Fusion Technol. 30 (1996) 310]. In particular, the model here takes into account the special magnetic topology of the FRC, and the nonuniformity of the radial plasma profiles in order to quantify final to initial compression ratios of the fluid quantities.