

Abstract Submitted  
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**Development of Negative Triangularity Plasmas in DIII-D**<sup>1</sup> M.L. WALKER, GA — We report on development of DIII-D electron cyclotron heated discharges with controlled negative triangularity plasma shapes, to evaluate the effect on electron heat transport in L-mode plasmas, as reported on TCV [1]. Analysis of TCV data found that negative triangularity exerts a stabilizing influence on the trapped electron mode, the dominant instability in the conditions of those experiments [2]. Major objectives of the DIII-D development are producing complementary plasmas, one with negative and one with positive triangularity, approximately symmetric in major radial coordinate and having similar density and current profiles. Major constraints include selection of plasma parameters and toroidal field to optimize fluctuation diagnostic measurements while preventing transition from L- to H-mode and deposition of EC heating power near the  $q=1$  surface to limit sawteeth. Issues discussed are definition of control scenarios by which the pair of shapes are accessed and their resulting controllability under the constraints imposed by DIII-D shaping control.

[1] Y. Camenen, et al, 2007 Nuc. Fus. 47 510

[2] A. Marinoni, et al, 2009 PPCF 51 055016

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P. Gohil  
GA

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