

Abstract Submitted
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The Effects of Improved Equilibrium Accuracy on Resistive DCON¹ ALAN H. GLASSER, Los Alamos National Laboratory — Numerical computation of the outer region matching data for resistive and other singular MHD modes of axisymmetric toroidal plasmas is much more sensitive to errors in the equilibrium solution of the Grad-Shafranov Equation (GSE) than corresponding ideal MHD stability analysis. While many direct and inverse GSE solvers are capable of producing sufficiently accurate solutions for ideal analysis, most have difficulty achieving adequate resolution and iterative convergence for resistive analysis. We have developed a Grad-Shafranov refiner using high-order spectral elements to improve on the accuracy of such solutions. The direct form of the GSE is solved iteratively, starting from an inaccurate initial solution, to obtain a highly accurate final solution, using the flux coordinates of the initial equilibrium, then mapped to a new refined inverse form. The effects of improved accuracy on resistive DCON will be shown.

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