

Abstract Submitted
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Use of high order, periodic orbits in the PIES code DONALD MONTICELLO, ALLAN REIMAN, Princeton Plasma Physics Laboratory — We have implemented a version of the PIES code (Princeton Iterative Equilibrium Solver¹) that uses high order periodic orbits to select the surfaces on which straight magnetic field line coordinates will be calculated. The use of high order periodic orbits has increase the robustness and speed of the PIES code. We now have more uniform treatment of in-phase and out-of-phase islands. This new version has better convergence properties and works well with a full Newton scheme. We now have the ability to shrink islands using a bootstrap like current and this includes the m=1 island in tokamaks.

¹A. Reiman *et al* 2007 *Nucl. Fusion* **47** 572

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