

Meeting: 999, Nashville, Tennessee, SS 11A, Special Session on Nonlinear Partial Differential Equations and Applications

999-76-21 **T. S. Morton***, 105 Roper Mountain Court, Greenville, SC 29615. *A solution for the flow field within a torus.*

A smooth, steady solution is given for the flow field in a three-dimensional torus. The solution requires the presence of the viscous term in the Navier-Stokes equations. The method of solution employs a transformation to invariant sets. The fluid density is constant along each streamline but can vary between streamlines. (Received August 10, 2004)