

Abstract Submitted
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A Study of the Topology of Magnetic Helicity and its Application to the Spheromak ROSELYN WILLIAMS, RONALD WILLIAMS, Florida A. and M. University — The purpose of our study is to develop the mathematical theory to describe and analyze the behavior of a spheromak plasma. This is a collaboration effort with the Spheromak Turbulent Physics Experiment (STPX) located at Florida A. and M. University. We present the results of the topology of magnetic helicity in order to develop mathematical models to describe the helicity, reconnection and confinement of the magnetic field of the spheromak plasma. We investigate the structures of the homotopy groups of the tori, knots, braids, and their relation to twisting, knotting, braiding and tangle of the magnetic fields.

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