

Abstract Submitted  
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**Validation and Continued Development of Methods for Spheromak Simulation** THOMAS BENEDETT, University of Washington — The HIT-SI experiment has demonstrated stable sustainment of spheromaks. Determining how the underlying physics extrapolate to larger, higher-temperature regimes is of prime importance in determining the viability of the inductively-driven spheromak. It is thus prudent to develop and validate a computational model that can be used to study current results and study the effect of possible design choices on plasma behavior. An extended MHD model has shown good agreement with experimental data at 14 kHz injector operation. Efforts to extend the existing validation to a range of higher frequencies (36, 53, 68 kHz) using the PSI-Tet 3D extended MHD code will be presented, along with simulations of potential combinations of flux conserver features and helicity injector configurations and their impact on current drive performance, density control, and temperature for future SIHI experiments. Work supported by USDoE

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