

Abstract Submitted
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Magnetic diagnostics on the Lockheed Martin T4 Experiment

JOHN RHOADS, Lockheed Martin Aeronautics Company — The Lockheed Martin T4 Experiment is a magnetically encapsulated linear ring cusp confinement device designed to study the physics relevant to the Compact Fusion Reactor program. As part of the diagnostics suite, an invasive three-axis magnetic probe and several flux loops have been constructed and installed. The probe was designed to reduce electrostatic pick-up by differentially amplifying two counter-wound coils for each axis. The flux loops are designed to detect plasma diamagnetism after accounting for the flux due to the background magnetic field. This mandates that the temporal evolution of the background field must be properly taken into account in order to discern the plasma response. To this end, both hardware and software techniques have been employed. Diagnostic designs and preliminary measurements will be presented.

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