Abstract Submitted
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3D magnetic reconnection studies in the Terrestrial Reconnection Experiment (TREX)[1] ALEXANDER MILLET-AYALA, JAN EGEDAL, JOSEPH OLSON, SAMUEL GREESS, RACHEL MYERS, JOHN WALLACE, MICHAEL CLARK, CARY FOREST, Univ of Wisconsin, Madison — Recent experimental studies on the Terrestrial Reconnection Experiment (TREX) focus on nominally 2D asymmetric magnetic reconnection configurations. In 3D reconnection, however, regions of zero magnetic fields, called magnetic nulls, become important sites of potential particle acceleration. In order to study 3D null-point reconnection in TREX, an adjustable pulsed coil (null coil) is added to the experiment to introduce magnetic nulls. Tilting the null coil relative to the existing reconnection drive and Helmholtz coils forms complex 3D magnetic field geometries, vastly different from other 2D reconnection geometries explored on TREX. To measure the effects of the added null-points, a combination of magnetic probes and Langmuir probes are used to characterize the plasma.

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