Magnetic Flux Array for the Terrestrial Reconnection Experiment (TREX)\(^1\) SAMUEL GREESS, JAN EGEDAL, JOSEPH OLSON, JOHN WALLACE, MICHAEL CLARK, CARY FOREST, UW-Madison — The Terrestrial Reconnection Experiment (TREX) at the Wisconsin Plasma Astrophysics Laboratory (WiPAL) studies kinetic reconnection in a variety of regimes. As currently configured, TREX is designed to use Helmholtz coils outside the 3m spherical WiPAL vacuum vessel to create a field that opposes a different field pulsed on by two internal coils. In order to characterize the main properties of the reconnection process in a single shot, we have constructed a nine-layered, 160 channels magnetic flux array. This array allows us to infer the magnetic flux function, \(\Psi\), and thus the toroidal component of the vector potential, \(A_\phi\), as a function of time for each shot. From \(A_\phi\), we further obtained the magnetic field geometry, current density, and reconnection rate \([1]\). Preliminary data from this flux array will be presented.


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