

Abstract Submitted
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Rogowski Coil Array for Collisionless Magnetic Reconnection Experiments at VTF¹ A. LE, J. EGEDAL, W. FOX, N. KATZ, A. VRUBLEVSKIS, M. PORKOLAB, MIT, PSFC — Recent experiments on magnetic reconnection at the Versatile Toroidal Facility (VTF) indicate that the electron current may become filamented during spontaneous reconnection events [1]. A new array of Rogowski coils, which has centimeter-scale resolution, will measure the parallel currents driven by fast reconnection in the presence of a guide magnetic field. The diagnostic should confirm the filamentary structure of the current profile, determine the distribution of filaments around the X-line, and reveal when the filaments are generated with respect to the onset of reconnection. In addition, multi-shot scans performed by moving the Rogowski coil array across a poloidal section and to several different toroidal angles will yield high-resolution measurements of the reproducible features of the current profile that develops during three-dimensional reconnection at VTF. Preliminary data will be presented if available.

[1] J. Egedal et al., Phys. Rev. Lett., **98**, 015003 (2007)

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