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Studying Filamentary Currents with Thomson Scattering on MST[1] D. J. DEN HARTOG, W. C. YOUNG[2], S. Z. KUBALA, Department of Physics, University of Wisconsin-Madison — The MST reversed-field pinch plasma generates bursts of toroidally localized magnetic activity associated with $m = 0$ modes resonant at the reversal surface near the plasma edge. Previously, using data from an array of edge magnetic probes, these bursts were connected to poloidal current filaments. Now the MST Thomson scattering diagnostic is being used to measure the net drift in the electron distribution due to these currents. An additional long-wavelength spectral bin has been added to several Thomson scattering polychromators, in addition to 5-7 pre-existing short wavelength spectral bins, to improve discrimination between shifted vs. broadened spectra. The bursts are examined in plasma conditions that display spontaneous periods of low tearing-mode activity, with higher confinement and higher temperatures that improve Thomson scattering measurement performance.

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