

Abstract Submitted
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Turbulent Parameter Studies in the Madison Symmetric Torus RFP with High Bandwidth Resolution¹ JAMES TITUS, EPHREM MEZONLIN, JOSEPH JOHNSON III, Florida A&M University, THE MST TEAM, UNIVERSITY OF WISCONSIN, MADISON, WI COLLABORATION — Anomalous ion heating is driven by magnetic field fluctuations, but the detailed physical mechanism is unknown. To help us understand how turbulence plays a role in ion heating, we study the standard turbulent parameters, i.e., Spectral Index, Characteristic Frequency, and Chaotic Dimension during the sawtooth crash at the Madison Symmetric Torus (MST). Magnetic field fluctuations have been measured in the 15 – 50 MHz range using a high bandwidth oscilloscope. During sawtooth crashes we have seen increases in magnetic field turbulent energy occurring at different times and different frequency ranges within the power spectrum. This allows us to look at the standard turbulent parameters during a sawtooth with fine time resolution. Knowing the changes in these parameters may help us to understand turbulence and its relevancy to anomalous ion heating.

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