MMS High time resolution measurements of kinetic plasma turbulence in Earth's magnetosheath and upstream solar wind

*Craig J. Pollock[1], Barbara L. Giles[1], Yoshifumi Saito[2], William Matthaeus [3], Roy Torbert[4,5]

1.NASA Goddard Space Center, 2.Solar System Science Division, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, 3.University of Delaware, 4.University of New Hampshire, 5.Southwest Research Institute

Kinetic plasma turbulence is known to be widespread in both solar wind and magnetosheath plasmas. The relationships between kinetic plasma turbulence and collisionless magnetic reconnection are likely myriad and complex. Plasma and magnetic field measurements are provided by MMS at unprecedented cadences, up to 133 Hz for sparsely sampled 3D electron distribution functions. Such fast measurements enable use of new windows into the kinetics of plasma turbulence in Earth's magnetosheath and the nearby solar wind. We will present examples of the turbulence signatures observed in the plasma and magnetic field observations on board MMS during the first Phase (1A) of the mission.

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