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On-board moments from Magnetospheric Multiscale's Fast Plasma Instrumentation in studies of turbulence

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The Fast Plasma Instrumentation for the Magnetospheric Multiscale mission measures the velocity distributions of electrons and ions with energies several eV to 30 keV. In its fast survey mode of operation, velocity distributions are acquired every 30 ms for the electrons and every 150 ms for the ions. Due to telemetry limitations, only a small subset of these distributions can be transmitted to the ground. To facilitate selection of intervals with high potential for addressing magnetic reconnection, a compact set of approximate plasma moments is computed onboard the spacecraft and sent to the ground at the full temporal resolution of the instrumentation. Although these moments were not intended for direct use in scientific investigations, they have the advantage of being the only FPI data product that is available at high time resolution across the entire scientific region of interest. In this presentation we report on prospects for using these data to address scientific questions, with emphasis on studies of turbulence.