

Abstract Submitted  
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**Investigation of Instabilities in the Magnetosphere** ELIZABETH WRABACK, SURJALAL SHARMA, JASON SHUSTER, University of Maryland, College Park — The Magnetospheric Multiscale Mission (MMS) uses four identical spacecraft orbiting the Earth in the magnetosphere to observe the microphysics of magnetic reconnection, particle acceleration, and turbulence. On 12/30/2015, within a 10-minute period of low ion density, there were a series of three 30-second peaks in the ion density and related structures in the ion temperature, ion velocity, and electron energy. In this presentation, I will discuss the analysis of the first density structure. By performing timing analyses and calculating the current density and the plasma parameters for this event, the density increase appears to be the product of magnetic reconnection. Future work is needed to determine whether the other two density structures are associated with magnetopause reconnection events and how these three structures are related.

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