

## MMS observations of the dense high speed flow in the magnetotail

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With the MMS observations in the magnetotail, we report a earthward, dense, high speed, bulk flow event. In this event, two dense high speed flows (DHSF) are observed. Compared with the plasma sheet, DHSF contains much denser and colder plasma. Ion density of DHSF is about 8 times higher to plasma sheet density, while temperature of DHSF is several times lower to plasma sheet plasma. Due to the high density, DHSF can transport mass more effective than normal bursty bulk flows. Such DHSF can be generated by Magnetic reconnection, but the generation mechanism is still unclear.

Keywords: High-density bulk flow, Plasma sheet, Magnetic reconnection