



Period and damping factor of Pi2 pulsations during oscillatory flow braking in the magnetotail

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Using 25 observations of damped oscillatory flow behavior in the near-Earth plasma sheet by the THEMIS probes during the 2008-2009 magnetotail seasons, we compare the oscillation period and the damping factor of the plasma sheet flows with those of the Pi2 magnetic pulsations on the ground at auroral and mid-latitudes near the local time of the conjugate ionospheric THEMIS footprints. Whereas the damping of the plasma sheet flows and of the pulsations on the ground occurs on the same time scales, the frequency of the pulsations is on average twice the frequency of the plasma sheet flows. We conclude that larger-amplitude ground pulsations at auroral latitudes were caused by the oscillatory flow braking in the plasma sheet, presumably through alternating field-aligned currents.