

## サブストームのエネルギー収支と磁気圏尾部のエネルギー輸送の評価

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### An assessment of substorm energy budget and energy transport in the magnetotail

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In the present study we have quantitatively assessed substorm energy budget and energy transport in the magnetotail, based on the results of our previous observational studies. We have found that the magnetotail can provide sufficient energy for the substorm expansion, i.e., the ionospheric Joule heating and particle precipitation as well as the ring current injection. This contradicts what Akasofu [JGR, 2013] argued. Most of the energy of the near-Earth plasma sheet is transported by the net Poynting flux directly from the lobes, rather than by fast flows in the plasma sheet generated by near-Earth magnetic reconnection. We contend, however, that near-Earth magnetic reconnection drives the enhancement of the Poynting flux during the expansion phase, fully contributing to the substorm energy.