Geophysical Research Abstracts
Vol. 17, EGU2015-5289-2, 2015
EGU General Assembly 2015


# Dynamical response of the magnetotail to the vertical directional changes of solar wind flow

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We perform simultaneous investigations of field and plasma parameters in the solar wind (OMNI data), in the magnetotail (THEMIS, CLUSTER) and auroral region to identify the onset conditions for magnetospheric substorms. Magnetic reconnection is a process which can explain fast and energetic releases of plasmas in the tail during southward oriented IMF, leading to energetic substorms. However, substorms associated with northward oriented IMF are more difficult to explain. Here we investigate the question what are the solar wind conditions which can trigger magnetic reconnetion in tail leading to substorm activity during northward IMF conditions. Our hypothesis is that magnetic reconnection or substorms can appear as result of so called vertical large scale windsock motion of the magnetotail associated with enhanced solar wind dynamic pressure on the nightside magnetopause.