

Spatial structure of properties in the Magnetail response to the variation of IMF

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Study of the Earth's magnetotail is an important key to clarify the interaction mechanism between the solar activity and the magnetosphere. Thus the near-earth magnetotail is an important region in magnetospheric dynamics. However, there have been few observational studies on the global structure of plasma density, temperature and magnetic fields in the magnetotail. We present a statistical study of these physical parameters by using the data acquired from the GEOTAIL spacecraft during 7 year period of 1995-2001. The distribution map of plasma density, temperature, magnetic field and Alfvén speed is examined over the region of $|X_{GSM}| = 10\sim 50$ RE and $|Y_{GSM}| < 20$ RE. And Earth's magnetotail is known to respond to strong solar wind driving in several different ways. In this statistical approach, we investigate the effect of solar wind conditions on the global structure of the magnetotail.