**Spatial distribution of the turbulent diffusion coefficient in the cross section of the plasma sheet of the Earth's magnetotail by MMS data**

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A preliminary analysis of dependence of the eddy diffusion coefficient on the plasma parameter *β*, the distance to the Earth, and the direction of the interplanetary magnetic field has been carried out. Publicly available Magnetospheric Multiscale Mission (MMS) data were used: hydrodynamic velocity with a time resolution of 1/4.5 s-1 as measured by FPI/DIS instruments and the magnetic field with a time resolution of 16 s-1 by FGM instrument. Since the position of the plasma sheet is variable, it is impossible to determine the position of the satellite in the cross section of the plasma sheet directly from its coordinates. Therefore, the plasma parameter *β* is used as an indicator of the satellite's location in the plasma layer, tail lobes, or in the transition layer between them: *β* > 1 inside the plasma sheet, 0.1 < *β* < 1 in the transition layer. It was found that the eddy diffusion coefficient increases with increasing the plasma parameter for *β* < 1, and remains constant for *β* > 1. The dependence of the distribution of the diffusion coefficient on the direction of the interplanetary magnetic field was also investigated.

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