

MODIFICATION OF INTERPLANETARY SHOCK FRONT IN THE MAGNETOSHEATH

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Fast forward interplanetary (IP) shocks have been identified as a source of largest geomagnetic disturbances. However, the shocks can evolve in the solar wind, they are modified by interaction with the bow shock and during their propagation through the magnetosheath. Our contribution continues the study of an evolution of IP shocks in the solar wind and in the magnetosheath. We compare profiles of the magnetic field and plasma parameters observed experimentally by several spacecraft in the solar wind and magnetosheath with the profiles of the same parameters resulting from two MHD numerical models (a global 3D MHD BATS-R-US and a local magnetosheath model). We can conclude that experimental magnetosheath data are well reproduced by modeled profiles despite the fact that the profiles exhibit complicated structures caused by the interaction of the IP shock with the Earth's bow shock and magnetopause. A good agreement of experimental data with the model results suggests that kinetic effects play a minor role in these interactions.