

MANIFESTATION OF SHOCK WAVE ORIENTATION IN THE COSMIC RAY INTENSITY AND GEOMAGNETIC FIELD DECREASE

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The determination of shock normal characteristics using multiple spacecraft data shows great deviations of their orientation. It makes difficult to choose burst or piston model of the heliospheric disturbance configuration. Hence, it is necessary to attract additional information. Earlier we have showed that the joint analysis of cosmic ray and geomagnetic data allowed to obtain similar information on an interplanetary disturbance geometry.

In our study, such an approach is developed to reveal the connection of the shock geometry and its normal orientation. The comparison of cosmic ray and geomagnetic field measurements has been carried out during the passes of the shock with determined normal characteristics calculated by multiple spacecraft data. It was showed that the angle between shock normal and solar wind bulk speed is corresponded to different locations of the spacecraft relatively the disturbed region. Taking into account unspherical form of the solar wind structures, the results are used for the curvature radius evaluation. Thus, an usefulness of joint analysis of cosmic ray and geomagnetic data for diagnostics of the interplanetary disturbance structure has been verified.