

# MULTIPOINT OBSERVATIONS OF THE DYNAMICS OF THE SHARP SOLAR WIND STRUCTURES BOUNDARIES

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This report presents the observations of the very fast (several seconds) and large (from 20% up to several times) changes in the solar wind ion flux and interplanetary magnetic field. These changes are connected to the sharp boundaries of solar wind small- and middle-scale structures. Such boundaries may be as thin as tens proton gyroradii or less.

The observations were performed aboard the Interball-1 satellite with very high time resolution (1 s or 60 ms) and “simultaneously” by the WIND spacecraft with time resolution 3 s. It was founded that almost for each case of the sharp boundary observation by one spacecraft we can find the similar event in the measurements of the second one.

So, we demonstrate many cases when the very fast changes of solar wind ion flux and magnetic field hold the duration of their fronts (less than 10 s) and their amplitude (about 1.5-2 times) during the propagation up to 1 mln km (up to one hour) from one spacecraft to the other.

And moreover - in several cases we found that the rather smooth front (with duration about 10-20 s), recorded by WIND at the distances about 100-200 Re, observed as the more steeper one (1-3 s) by Interball-1 at the distance 15-20 Re from the Earth. This difference may be explained by local irregularity of the disturbance front or by its real steepness. We present some evidences in favor of the second hypothesis.