

# SMALL-SCALE ION FLUX AND MAGNETIC FIELD VARIATIONS IN SOLAR WIND, FORESHOCK AND MAGNETOSHEATH

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Small-scale fluctuations of plasma and magnetic field parameters in the magnetosheath and foreshock are much more intensive than in undisturbed solar wind and they are mostly nonlinear with amplitudes more than 10%.

In this report we present the investigation of the properties of such fluctuations on timescales 1-240 sec. INTERBALL-1 ion flux and magnetic field measurements in solar wind, foreshock and magnetosheath during 1996-2000 were analyzed and compared with results of similar data analysis from CLUSTER spacecraft. Statistical investigation showed that amplitudes of fluctuations of parameters in magnetosheath and foreshock are about 3 times larger than in undisturbed solar wind. Properties of the small-scale turbulence in the magnetosheath are strongly depend on value of  $\Theta_{Bn}$  angle - intensity of fluctuations grows when the  $\Theta_{Bn}$  angle decreases. Wave properties of plasma and magnetic field parameters are also strongly different in undisturbed solar wind, foreshock, quasi-parallel and quasi-perpendicular magnetosheath.