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Correlation between magnetic field and plasma density in the heliosheath: Comparison with the magnetosheath

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The heliosheath exhibits magnetic field fluctuations of very large amplitudes at scales from several hours to tens of days with complex profiles. The fluctuations were described as “turbulence”, although the nature and origin of these fluctuations are not fully understood.

We analyze high-resolution observations of the magnetic field strength, B and plasma density, N measured by Voyager 2 in the heliosheath after the crossing of the termination shock from the 245th day of the 2007 year till the end of 2008. We examine correlations among these parameters on two hour subintervals. The structures with a time period about 2 hours exhibit a good anticorrelation between B and N. We compare these results with the previous results of Cluster observations of magnetosheath fluctuations.