

# TURBULENT SPECTRUM AND ALFVÉN VORTICES IN EARTH MAGNETOSHEATH

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We study the magnetohydrodynamic turbulence in the plasma of the Earth's magnetosheath. We show that the magnetic field fluctuation spectra present some degree of universality. We show also that, downstream of quasi-perpendicular bow shocks, magnetic fluctuations are intermittent. Owing to the space resolution of the multi-satellite CLUSTER mission and to the time and scale wavelet resolution it was possible to show that the intermittency is due to coherent structures in form of Alfvén vortices. The magnetic Alfvén vortex, cylindrical structure parallel to the mean magnetic field, is an equivalent of an incompressible hydrodynamical vortex, but with magnetic fluctuations such as  $\delta B/B_0 = \xi \delta V/V_A$ . The presence of such structures in the magnetosheath can be a signature of a strong turbulence or a result of the filamentation of an Alfvén wave.