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Large scale magnetic field and plasma flow behaviour in Earth's magnetosheath and its significance to the Solar-Terrestrial interaction.

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The plasma conditions in Earth's magnetosheath play a key role in the transfer of solar wind energy to Earth's magnetosphere. The availability of a large data set of Cluster in-situ spacecraft measurements permits a statistical study of the plasma conditions typical to this region. We present the results of recent statistical survey's and studies which examine the draping of the magnetic field and the form of plasma flow and density in the region between the bow shock and magnetopause boundary. We discuss the observed flow and magnetic field characteristics within the context of gas-dynamic and MHD model physics.