



Magnetic fluctuations in the solar wind: dependence on kinetic parameters and on the temperature of the source region determined from ion charge state composition

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Fluctuations in either solar wind or heliospheric magnetic field parameters are described usually in terms of turbulence parameters applied to the plasma conditions of the solar wind. The existence of a turbulent cascade, the quasi-Kolmogorov description of its inertial range, its evolution and its intermittent character have been extensively studied and described. However, questions remain concerning the physical processes that influence the cascade, in particular details of how the turbulence parameters (e.g. power density functions) change as a function of solar wind kinetic parameters (speed, pressure), as well as in function of the identifiable coronal origin of the solar wind. This latter can be best determined from the charge state ratios of heavy ions such as oxygen. We select the parameters that describe the turbulence and examine their dependence on these parameters. This allows us to draw conclusions about the nature, and a better description of the way the turbulent cascade operates in the presence of velocity shears due to kinetic effects and to boundary effects related to the origin of solar wind streams in the corona.