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Test of intermittency observed in the Earth's electron foreshock.

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Intermittency (from turbulence) has been studied in the solar wind in works such as that of Bruno et al. who used small to large scale interplanetary electric field deduced from V cross B data. We search for signatures of intermittency in the low frequency (below fp) electromagnetic wave activity observed in the Earth's electron foreshock with CLUSTER. The electron foreshock has the advantage of being a driven plasma producing larger wave signals than in the solar wind and thus easier to detect with the instumentation. We attempt to apply statistical tools such as probability distribution functions of fluctuations. Another aim is to represent a range of power spectra of fluctuations as a function of wavenumber (spatial scale) which requires identifying the wave modes. One safe way of doing so is via multi-point k-f analysis. There are several limitations attached to the data which can affect the scope of the results, for example, periodic interference result in incomplete time-series, DC electric field patterns must be removed and only spin plane components of the electric field are available. Position within the electron foreshock can also vary on the time scale of minutes. We bin the observations in terms of some properties of the waves and location within the electron foreshock. We also check the intermittent behaviour of plasma density fluctuations for reference.