# Abstract Details

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**Title:** [NL1/SP19] Long-range interactions determined from bi-kappa distri in solar wind turbulence

**Abstract:**

The probability distributions (PDFs) of the differences of physical key variables in the intermittent solar wind are scale dependent and subje strong non-Gaussianity for small-scale spatial separations, whereas fo scales the differences turn into a Gaussian normal distribution. These characteristics were hitherto described in the context of the Castaing distribution, log-normal or the shell model, containing a priori assump about the nature of long-range forces, thus providing insufficient just for nonlocality in turbulence. Theoretically the nonextensive characte interplanetary medium, counting for long-range interactions or memo non-locality in turbulence, can be introduced by pseudo-additive entro generalization where a single parameter kappa measures the degree nonextensivity in the system. This approach opens the possibility for experimental studies of specific mechanisms responsible for long-rang interactions in turbulence without need of referring to a priori model assumptions. In order to study particular characteristics of short and range interactions the functional dependence between the spatial sep scales and the nonextensive parameter kappa for recently introduced fitting bi-kappa functions to the observed PDFs is evaluated. Moreove PDFs within periods of slow and fast wind are investigated separately extract the nature of the underlying nonlinear coupling. It is argued t nonextensive entropy generalization provides generically an unbiased to the specific nonlinear features of intermittency in the turbulent fluctuations.

**Presentation Mode:** Oral

**Keywords:** Long-range interactions, probability distributions, intermittency

**Status:** Pending.

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