

## **Self-consistent Castaing distribution of the inertial range turbulent fluctuations in the solar wind.**

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The intermittent behavior of solar wind turbulent fluctuations has often been investigated through the modeling of their probability distribution functions (PDFs). Among others, the Castaing model has successfully been used in the past. In this paper, the energy dissipation field of solar wind turbulence has been studied for fast, slow, and polar wind samples recorded by Helios 2 and Ulysses spacecraft. The statistical description of the dissipation rate has then been used to remove intermittency through conditioning of the PDFs. Based on such observation, a self-consistent, parameter-free Castaing model is presented. The self-consistent model is tested against experimental PDFs, showing good agreement and supporting the picture of a multifractal energy cascade at the origin of solar wind intermittency.