

Besov spaces in multifractal environment and the Frisch-Parisi conjecture

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Multifractal properties of data, especially in turbulence, are now seriously established. Unfortunately, the parameters measured on these data do not correspond to any typical (or almost sure) properties of functions in the standard functional spaces: Hölder, Sobolev, Besov, . . . In this talk, we introduce very natural function spaces in which the typical functions possess very rich scaling properties, fitting those observed on data for instance. We characterize these spaces in terms of oscillations and wavelet coefficients. These spaces provide a solution to the so-called Frisch-Parisi conjecture. Joint work with Julien Barral (Université Paris 13).