



Multifractal non-stationarity effects on atmospheric extreme events

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Mathematical descriptions of extreme events in multifractal fields have been derived in recent years by various authors. However, aside from the intrinsic non-stationarity of the multifractal field, which is being naturally taken into account in a multifractal model, we have shown in previous work that there exist non-stationarities in the parameters of the multifractal generator itself, which may be due to the planetary-scale break in the space-time scaling structure of atmospheric fields, or to climatic-scale variability, or most likely to an interplay of both. The present work deals with the modeling of multifractal generator non-stationarities and their implications in extreme-events models. An application using wind velocity data from Mexico City is being presented.