Self-scaling of turbulent energy dissipation correlators

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Abstract

In a number of recent papers, a continuous spatio-temporal process based on the integration of Lévy bases was proposed to describe the statistics of the turbulent energy dissipation. An immediate consequence of this model is self-scaling of dissipation correlators, similar to the concept of Extended Self Similarity (ESS) for velocity increments. We report empirical findings about self-scaling of dissipation correlators that support the Lévy based dynamical modeling of the energy dissipation.