



## **Multifractal clustering of tracers in compressible random flows**

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A quantitative relationship is presented between the multifractal spectrum of the asymptotic mass distribution in a random compressible flow and the long-time fluctuations of the local stretching rates of the flow. Applied to a simple compressible hydrodynamical model with known stretching-rate statistics, the relation produces a nontrivial spectrum of multifractal dimensions – characteristic of strong intermittency – that is confirmed numerically. The model pertains not only to compressible fluids but also to the surface flow of an incompressible fluid (e.g. ocean surface) and to inertial particles in incompressible flows (e.g. clouds).