

# Colloqui della Classe di Scienze

Anno Accademico 2021/2022

Scuola Normale Superiore  
Piazza dei Cavalieri, 7 - PISA

**16 FEBBRAIO 2022**

ore 15.00

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*Multifractal approach to fully  
developed turbulence*

**ABSTRACT:**

The idea of the multifractals is basically contained in the large deviation theory; however, the introduction of the multifractal description in the 1980s had an important role in statistical physics, chaos and disordered systems. In particular, it clarified rather neatly that the usual idea, coming from critical phenomena, that just a few scaling exponents are relevant, is not completely correct, and an infinite set of exponents is indeed necessary for a complete characterization of the scaling features. I discuss the multifractal approach to fully developed turbulence, and in particular some nontrivial predictions for the statistical properties of the velocity gradients, the existence of an intermediate dissipative range and Lagrangian statistics. .



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