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Università di Roma Tor Vergata
Dipartimento di Fisica



SEMINARIO TEORICO

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“Gravity and Geometrization of Turbulence”

Abstract

Fully developed incompressible fluid turbulence is largely considered as the most important unsolved problem of classical physics.

Most fluid motions in nature at all scales are turbulent, yet despite centuries of research, we still lack an analytical description and understanding of fluid flows in the non-linear regime. Experimental and numerical data suggest that turbulence at the inertial range of scales reaches a steady state that exhibits statistical homogeneity and isotropy and is characterized by universal scaling exponents. We will propose a conceptually new viewpoint inspired by black hole dynamics and construct a field theory geometrization of turbulence. Within this framework we will derive an exact analytical formula for the inertial range longitudinal anomalous scalings in agreement with the available numerical and experimental data. We will present new predictions of the formula.

Martedì

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ore 14,30

Aula Seminari “U.M.Grassano”

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