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Two-loop calculations for a compressible turbulence: Renormalization group analysis of stochastic Navier-Stokes equation

Thursday 5 July 2018 15:00 (20 minutes)

A model of fully developed turbulence of a compressible fluid is reviewed, an overview of turbulent regimes of a compressible fluid will be presented. Fluid dynamics is governed by stochastic version of Navier-Stokes equation. We show how corresponding field theoretic model can be obtained and further analyzed by means of the perturbative renormalization group (RG). In this approach, scaling properties are related to the fixed points of the RG equations. The perturbation theory is constructed within formal expansion scheme. Permissible scaling regimes in one- and two-loop levels are discussed.

Authors: Dr GULITSKIY, Nikolay (Saint Petersburg State University); Dr TOMAS, Lucivjansky (Faculty of Sciences, P.J. Šafárik University, Moyzesova 16, 040 01 Košice, Slovakia); Dr MIZISIN, Lukas (Faculty of Sciences, P.J. Šafárik University, Moyzesova 16, 040 01 Košice, Slovakia); Mr SKULTETY, Viktor (Faculty of Sciences, P.J. Šafárik University, Moyzesova 16, 040 01 Košice, Slovakia)

Presenter: Dr GULITSKIY, Nikolay (Saint Petersburg State University)

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