

ΓΕΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ

PHYSICS COLLOQUIUM

Thursday, 15 February 2018

17:00 - 18:00

3rd Floor Seminar Room

"On far-from-equilibrium hydrodynamics and gravity"

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Abstract

The viscous Navier-Stokes equations have been known and studied for about 200 years and form the core of hydrodynamics. The relativistic viscous equations have a shorter history but are becoming increasingly applicable to exotic fluids on earth and in the universe. All such equations have serious limitations that remained to date. In the last ten years, hydrodynamics has been reformulated as an effective theory and a much better understanding of its validity and its limitations have been obtained. The string theory/gauge theory correspondence has provided a framework where hydrodynamics can be derived from the fluctuations of black hole horizons. This has opened the way for far-reaching studies of the hydrodynamic expansion, its regime of applicability, and its extension to far-out-of-equilibrium systems.