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Generalized Navier-Stokes equations and soft hairy horizons in fluid/gravity correspondence. (English) [Zbl 1480.83006](#)

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Summary: The fluid/gravity correspondence establishes how gravitational dynamics, as dictated by Einstein's field equations, are related to the fluid dynamics, governed by the relativistic Navier-Stokes equations. In this work the correspondence is extended, where the duality between incompressible fluids and gravitational backgrounds with soft hair excitations is implemented. This construction is set through appropriate boundary conditions to the gravitational background, leading to a correspondence between generalized incompressible Navier-Stokes equations and soft hairy horizons.

MSC:

[83C05](#) Einstein's equations (general structure, canonical formalism, Cauchy problems)

[83C55](#) Macroscopic interaction of the gravitational field with matter (hydrodynamics, etc.)

[76Y05](#) Quantum hydrodynamics and relativistic hydrodynamics

[35Q30](#) Navier-Stokes equations

[58J32](#) Boundary value problems on manifolds

Full Text: [DOI](#) [arXiv](#)

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