

Stability of singular self-similar flow

Marco Cannone

SUMMARY

I will present a mathematical approach based on harmonic analysis tools that allows for the study of asymptotic properties of solutions to the Navier-Stokes system for incompressible fluids in three-dimensional space. Solutions may exhibit singularity due to singular external forces, which can be either singular finite measures or more general tempered distributions with bounded Fourier transforms. Results on the asymptotic properties of such solutions, either for large values of the space variables (referred to as far-field asymptotics) or for large values of time (given by self-similar solutions), will be obtained.

Keywords: Navier-Stokes equations, Convection-diffusion equations, Cauchy problem, Stationary solutions, Singular solutions, Asymptotic behavior of solutions.

AMS Classification: 35A21; 35B40; 35C06; 35Q30; 76D05

References

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Laboratoire d'Analyse et de Mathématiques Appliquées
Université Gustave Eiffel
email: marco.cannone@univ-eiffel.fr
<https://univ-gustave-eiffel.academia.edu/MarcoCannone>