

Title : Introduction to the mathematical theory of the Navier-Stokes equations.

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In this course we shall introduce the fundamental tools and results :

1. Lipschitz domain : definition and properties
2. function spaces of hydrodynamics
 - Sobolev spaces
 - Antiderivative of a distribution
 - The Necas inequality
3. Steady Stokes flow in Lipschitz domain
 - Notion of weak solution
 - Existence and uniqueness of a weak solution
4. Steady Navier-Stokes flow in Lipschitz domain
 - Existence of a weak solution