

## THE FOUNDATIONS OF FLUID DYNAMICS

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**Abstract.** In this lecture I introduce the basic concepts needed to understand fluid motions at a macroscopic level. Hence, the idea of a continuous medium and its kinematical properties are presented. Then the physical laws governing the motion (mass, momentum and energy equation) are derived and discussed. The concept of rheological law is introduced and illustrated. I end this lecture with a discussion of the boundary conditions that are needed to complete the equations of motion.

Suggested readings:

- Rieutord, M. “Une introduction à la dynamique des fluides” (Masson, 1997) first chapter.
- Batchelor, G. “An introduction to fluid dynamics”, 1966.

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