

Institut de Mécanique des Fluides  
2 Allée du Pr Camille Soula, Toulouse

# Blaise Delmotte

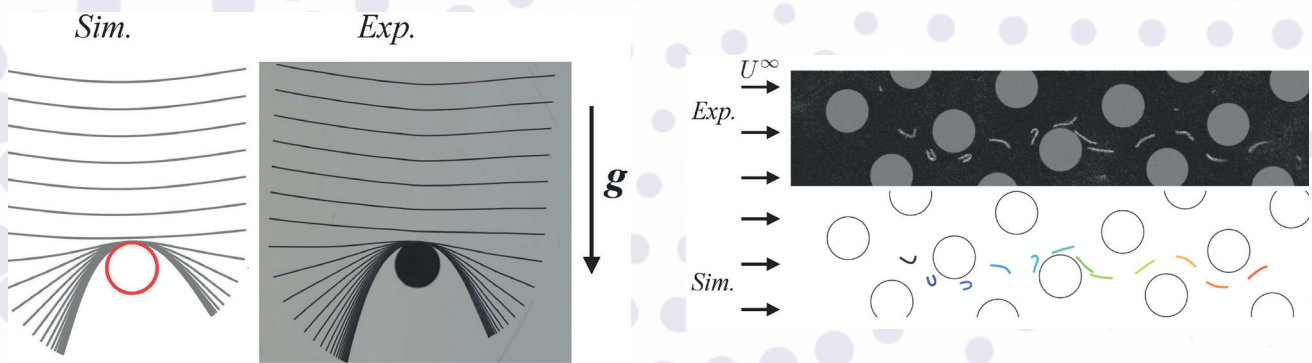
Chargé de Recherche CNRS - LadHyx / Polytechnique

Lundi 27 mai à 10 h 30 • Amphithéâtre Nougaro

## Dynamics of flexible fibers in structured environments

The transport of elastic particles often takes place in complex media structured by obstacles whose size is similar to that of the moving particles. In this regime, which covers a wide range of environmental, industrial and biomedical processes, the dynamics of flexible objects results from the complex interplay between external flow, internal elastic stresses, contact forces and hydrodynamic interactions.

In this talk we will combine experiments, theory and numerical simulations to investigate the dynamics of flexible fibres in a viscous fluid embedded with obstacles of arbitrary shape. We will consider two different fields driving the fibre motion: gravity in a quiescent fluid and pressure-driven flows in microfluidic chips.



We will study fibre dynamics in these two systems, explain the mechanisms involved and show how interactions with obstacles can be exploited to propose new strategies for sorting soft particles based on their size and/or elasticity.

