

# SEMINAR @SystemX



Nader Masmoudi (Professor at New York University) will animate a Seminar@SystemX on the subject “[Hydrodynamic Paradoxes](#)”, on May 26 at 4:30pm.

Nader Masmoudi is a Tunisian mathematician known for his work on nonlinear partial differential equations of hydrodynamics. He received a diploma from École normale supérieure in Paris in 1996 and completed his doctorate from the University of Paris-Dauphine in 1999 under the supervision of Pierre-Louis Lions.

Later, he became a professor at the Courant Institute of Mathematical Sciences at New York University in 2008.

Masmoudi's research is focused on various aspects of hydrodynamics, including the qualitative behaviour of boundary layers, non-Newtonian fluids, chemotaxis, and stability problems in hydrodynamics. He has made significant contributions to the study of nonlinear partial differential equations, particularly the Euler equation, Navier-Stokes equation, surface waves, gravity waves, and capillary waves.

He has received numerous awards and recognitions for his contributions to mathematics, including a gold medal at the International Mathematical Olympiad in 1992, the Fermat Prize in 2017, election to the American Academy of Arts and Sciences in 2021, and the International King Faisal Prize in 2022 jointly with Martin Hairer and has been awarded the Chair of Excellence by the Fondation Sciences Mathématiques de Paris. He has also presented at the International Congress of Mathematicians in Rio de Janeiro in 2018. Masmoudi's work on the stability of the shear flow according to Couette for the two-dimensional Euler equations and the viscous case for the boundary layer formation according to Prandtl in the two-dimensional Navier-Stokes equations are particularly noteworthy.

## **Resume :**

A paradox usually refers to an unexpected statement that sharply contradicts a generally accepted opinion. We will review some of the famous paradoxes in fluid dynamics such as the “D’Alembert paradox”, the reversibility paradox, the stokes paradox and the Eiffel paradox.