



Università di Pisa

## A brief journey in laminar chaotic flows and their applications

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> June 23<sup>rd</sup> @ 4.00 pm Aula Pacinotti School of Engineering

Laminar flows, traditionally perceived as orderly and predictable, can exhibit chaotic behavior under specific conditions, leading to enhanced mixing and transport phenomena. In this seminar we will delve into the mechanisms of chaotic advection in laminar regimes, exploring the theoretical foundations according to dynamical systems theory to elucidate the underlying processes. Implications to the design of efficient micromixers, optimisation of reactive processes, and other practical engineering applications will be discussed, highlighting recent advancements and future directions in the field.

Stefano Cerbelli is a Full Professor of Chemical Engineering at Sapienza University of Rome. His research spans transport phenomena, dynamical systems, and chaotic mixing in laminar flows, with a strong interdisciplinary approach. He has authored more than 100 scientific papers in the field and is internationally recognised for his contributions to the theory and applications of chaotic advection.