Guest Speaker: Prof. Annalisa Quaini

Title: Learning the language of the Universe: the mathematics of clouds, crowds, and nanoparticles

Abstract: Mathematics and mathematical modeling allow us to explore and understand complex systems, from natural phenomena to human behavior. By using mathematical equations to describe these systems, we can predict their behavior under different conditions and test hypotheses in a way that would be impossible through experimentation alone. In this talk, I will provide some real-world examples of mathematical modeling, explain the basis of computational simulations, and discuss how they contribute to our understanding of the world.

Biography: Annalisa Quaini is a Professor of Mathematics at the University of Houston. She earned B.S./M.S. Degrees in Aerospace Engineering at Politecnico di Milano (Italy) in 2005 and received a Ph.D. in Applied Mathematics from the Ecole Polytechnique Federale de Lausanne (Switzerland) in 2009. Her interests are in the general area of computational partial differential equations, and more specifically in computational fluid dynamics and fluid-structure interaction with various applications in Medicine, Biomedical Engineering, and Atmospheric Science. She is the recipient of the 2021-2022 William and Flora Hewlett Foundation Fellowship from the Harvard Radcliffe Institute.