

Enrique Fernández-Nieto

Short bio:

Since 2020, he has been a Full Professor at the University of Seville and a member of the research group "Mathematical Modelling and Simulation of Environmental Systems." His work centers on the mathematical modelling and numerical approximation of geophysical flows, with applications spanning a wide range of natural hazard and environmental phenomena, including flood dynamics, snow avalanches, non-Newtonian viscoplastic flows, debris flows, aerial and submarine landslides, tsunami wave generation and simulation, bedload sediment transport, erosion processes, polydisperse sedimentation, and lava flows. Alongside this, he has a strong interest in the efficient implementation and design of computationally cost-effective numerical methods tailored to these models. He has also collaborated with architects and engineers to develop enhanced models and solvers aimed at assessing and improving the thermal efficiency of buildings through passive thermal solutions.

Short abstract of the Course: “Numerical methods for PDEs: Basic results”

Introduction to finite volume methods and implementation, with applications to some geophysical models