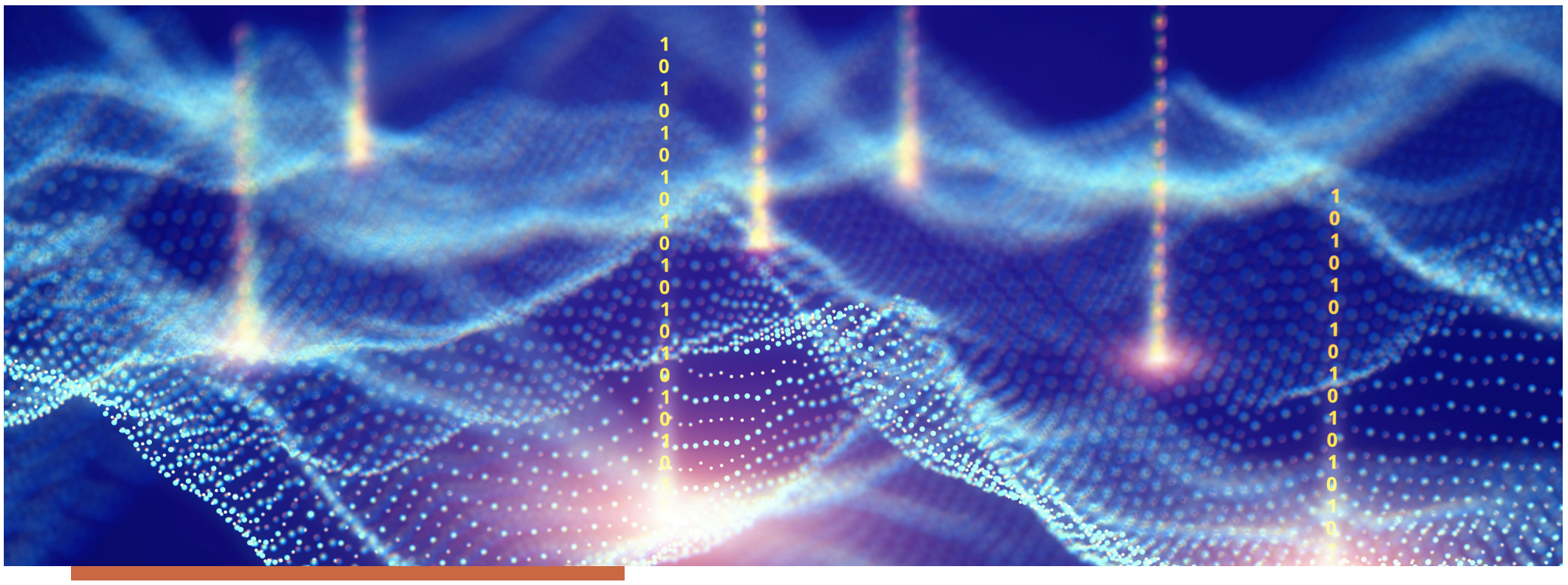

UNIVERSITÀ DEGLI STUDI DI BERGAMO | Dipartimento di Ingegneria e Scienze Applicate

On the integration of machine learning in flow simulations

Machine learning and artificial intelligence (AI) have been prominent on the last few years as methods to enhance the accuracy and efficiency of flow simulations.
From variational auto-encoders (VAEs) to transformers and multi-layer perceptrons (MLPs), these tools among others have revolutionized the way we can extract information from fluid flows coming from both experimental and numerical data.
This seminar will showcase **pyLOM**, an open-source tool developed at the **Barcelona Supercomputing Center (BSC)** that integrates “traditional” physical models such as POD and DMD and AI based models such as VAE and MLP in high-performance scenarios. The seminar will also illustrate new architectures developed at BSC that blend traditional and AI approaches. Participants will obtain new perspectives on this hybrid approach in scientific computing.

27 June 2025
14:00 - 15:30

Room B004
Engineering Campus
Via Marconi, 5
Dalmine (BG)
University of Bergamo

Hybrid format
(in-person and online)

Online event

SPEAKER

Prof. Arnau Miró

Tenure-track professor at UPC with experience in high-fidelity computational fluid dynamics. He has specialized in HPC, machine learning, and reduced-order modeling for aerospace and environmental applications.

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