Reduced Order Modeling And Machine Learning For Large Eddy Simulation And Related Topics

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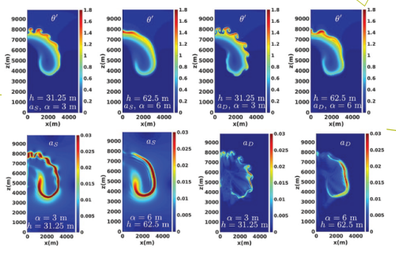
Large eddy simulation (LES) has emerged as a popular lower-cost alternative to Direct Numerical Simulations (DNS) for the numerical simulation of highly convective problems. However, accurate LES computations require long times on HPC facilities, which are incompatible with tight deadlines and multi-query contexts arising from, e.g., uncertainty quantification, optimal control, or inverse problems. For revolutionizing concepts like digital twins (engineering) and computer-aided clinical trials (medicine), accurate flow simulations need to be fast and robust, with a minimal or no-user setup. Reduced Order Modeling (ROM) and Machine Learning (ML) may provide new groundbreaking techniques for the efficient LES of convection-dominated problems or other problems with similar features in computational mechanics. This Conference aims to gather LES, ROM, or ML experts to discuss and identify innovative strategies in computational mechanics and related fields of Engineering and Science.

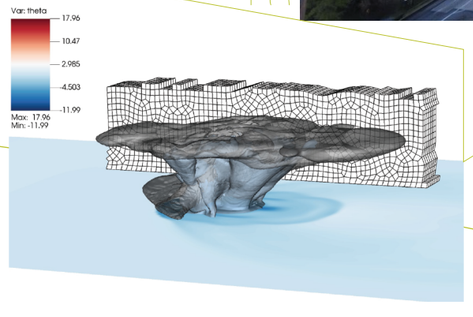
Organizers:
Alessandro Veneziani
Omer San
Traian Iliescu

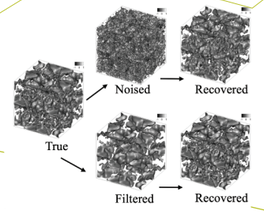
With the support of the US National Science Foundation

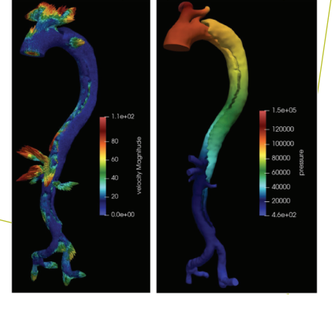
Invited Speakers:
P. Fischer (Argonne, USA)
G. Iaccarino (Stanford, USA)
G. Rozza (SISSA, Italy)
P. Perdikaris (Univ. Penn, USA)
A. Quaini (Univ. Houston, USA)
W. Layton (Univ. Pittsburgh, USA)
M. Yano (Univ. Toronto, CA)

Scientific Committee:
Annalisa Quaini (Univ. Houston, USA)
Omer San (Univ. Tennessee at Knoxville, USA)
Traian Iliescu (VA Tech, USA)
Alessandro Veneziani (Emory, USA)
Julianne Chung (Emory, USA)
Matthias Chung (Emory, USA)
Peng Chen (GA Tech, USA)
Talea Mayo (Emory, USA)
Yuanzhe Xi (Emory, USA)









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