SISSA
Scuola Internazionale Superiore di Studi Avanzati

Prof. Ing. Gianluigi Rozza – SISSA Director’s Delegate, Prof. Stefano Ruffo
SISSA in brief

• *Scientific center of excellence*, with a special statute and State funded, within the national and international academic scene, located in Trieste

• The first (1978) University in Italy created to offer *PhD courses* and entirely focused on post graduate teaching and research

• Three main research areas: *Physics, Neurosciences and Mathematics*. All teaching and research are conducted in English
SISSA Proof of Excellence

SISSA holds the Top Position among the Northern Italian universities for research quality (4\textsuperscript{th} national position), according to the rankings compiled by ANVUR, on behalf of the Italian Ministry for Education, University and Research.

The quality level of the research is further confirmed by the fact that within the competitive field of European funding schemes (ERC) SISSA holds the Top Position among all Italian scientific institutes in terms of research grants obtained (19) in relation to the number of researchers and professors (70).
SISSA: Research Excellence Focus

• Big data (& High Performance Computing - HPC)
• Biotech & Aging
• Maritime Technology/Blue Growth
SISSA Big Data & HPC

• SISSA hosts and manage (along with ICTP - International Centre for Theoretical Physics) «Ulysses», one of the largest High Performance Computing (HPC) facilities (100 TeraFlops) in Italy and Europe

• SISSA mathLab: a laboratory (more than 30 Scientists) for mathematical modeling and scientific computing devoted to the interactions between mathematics and its applications

• Strongly involved in «MaX - Materials design at the Exascale», a European centre of excellence devoted to enable the best use and evolution of HPC for materials research and innovation

• Strongly involved in the CECAM (Centre Européen de Calcul Atomique et Moléculaire), coordinated by EPFL, Lausanne
SISSA Aging & Biotech Research

• A variety of research groups are active in Neuroscience, spanning Cognitive Neuroscience, aimed at understanding how the brain produces behavior, and Neurobiology, investigating the molecular, cellular and integrative mechanisms at work in the nervous system.

• Frontier Research aiming at exploiting the potential of technologies based on graphene- and other 2D materials in biomedical implants and neural interface applications (Graphene Flagship).

• Development of novel methods for biostatistical analysis, informatics, and modeling to be applied in the diagnostic sector.
SISSA Maritime Technology/Blue Growth

• Computational Fluid Dynamics studies around ships and hulls

• Physical, Mathematical, Numerical Modelling of complex systems and phenomena involving marine environment (wind, offshore, sailing, …)

• (Shape) Optimization and Flow Control

• Material modelling

• Safety and comfort
SISSA & Industry 4.0
(MISE – Ministry of Economic Development)

• Mechatronics Lab
• Mathematical Analysis, Modelling, and Applications
• Data Science and Scientific Computing
• Cluster HPC (ICTP/SISSA)
• Molecular, Statistical and Biophysics Lab
• Tactile Perception and Learning Lab
SISSA Collaborations

• More than **240 collaboration agreements with the world's leading schools and research institutes**, i.e. Weizmann Institute of Science (Israel), Suzhou Industrial Park (China), MIT (Cambridge – USA), Riken Institute (Japan), etc.

• Ongoing collaborations with some of the world leading companies in their respective fields, such as **Danieli Group** (metal industry), **Fincantieri**, **MonteCarloYatchs** (shipbuilding industry), food technologies companies, **Tucker-Davis Technologies** (neurophysiology sector), **IBM**, etc.
Thanks for your Attention

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