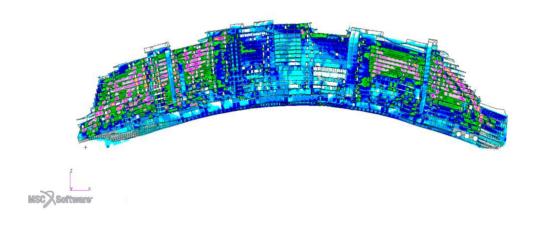**PRESS RELEASE**

New approaches for ship design: the thesis of a SISSA alumnus awarded by ECCOMAS

Marco Tezzele's PhD thesis recognized as the best doctoral thesis in the field of computational methods for applied sciences by the scientific organization ECCOMAS

Trieste, 24 May 2022

SISSA alumnus Marco Tezzele wins the prize for the best thesis of 2021 with a project dedicated to the optimisation of naval development processes. The recognition comes from ECCOMAS (European Community on Computational Methods in Applied Sciences), a scientific organization that brings together European associations with interests in the development and applications of computational methods for science and technology. The work was carried out thanks to the collaboration between the mathLab research group of SISSA and Fincantieri, which also supported it financially.

Tezzele's thesis project, who is currently a postdoc researcher at the Oden Institute for Computational Engineering and Sciences in Austin, Texas, was aimed at optimizing the ship's design process through model and parameter space reduction techniques. In particular, various models were studied, which were then used to solve problems, such as: the structural optimization of cruise ships, the optimization of the shape of a hull for multi-purpose boats and of a NACA (National Advisory Committee for Aeronautics) airfoil, the prediction of hydroacoustic noises.

The decision to reward Marco Tezzele's work was based on the relevance of the topic, the originality of the thesis, its scientific content, the innovative numerical developments and the personal involvement of the candidate.

According to the opinion of the Evaluation Committee, Tezzele's doctoral thesis, carried out in SISSA and entitled "Data-driven parameter and model order reduction for industrial optimisation problems with applications in naval engineering", combines an excellent knowledge of both theory and practice with special insight into both fundamental and computational aspects.

«This award proves how it is possible to create highly innovative collaborations between universities and companies, establishing a virtuous circle with positive repercussions on the territory» explains Tezzele. «I thank the Italian Society of Applied and Industrial Mathematics (SIMAI) for selecting and supporting my thesis, Fincantieri for believing in the project, and finally SISSA for making this achievement possible thanks to its unique environment».

The thesis work being recognized by this prestigious award underlines once again the value and importance of collaborations between the Schools of Excellence and high-innovation companies, allowing PhD students to translate their research works into practical impact for society.