List of Publications

1. N. Demo, M. Tezzele, and G. Rozza. A non-intrusive approach for proper orthogonal decomposition modal coefficients reconstruction through active subspaces. *Submitted, Comptes Rendus de l'Académie des Sciences DataBEST 2019 Special Issue*, 2019

2. G. Rozza, M. W. Hess, G. Stabile, M. Tezzele, and F. Ballarin. Preliminaries and warming-up: Basic ideas and tools. In P. Benner, S. Grivet-Talocia, A. Quarteroni, G. Rozza, W. H. A. Schilders, and L. M. Silveira, editors, *Handbook on Model Order Reduction*, volume 1, chapter 1. De Gruyter, 2019

3. M. Tezzele, N. Demo, and G. Rozza. Shape optimization through proper orthogonal decomposition with interpolation and dynamic mode decomposition enhanced by active subspaces. In *Proceedings of MARINE 2019: VIII International Conference on Computational Methods in Marine Engineering*, pages 122–133, 2019

4. N. Demo, M. Tezzele, A. Mola, and G. Rozza. A complete data-driven framework for the efficient solution of parametric shape design and optimisation in naval engineering problems. In *Proceedings of MARINE 2019: VIII International Conference on Computational Methods in Marine Engineering*, pages 111–121, 2019

5. A. Mola, M. Tezzele, M. Gadalla, F. Valdenazzi, D. Grassi, R. Padovan, and G. Rozza. Efficient reduction in shape parameter space dimension for ship propeller blade design. In *Proceedings of MARINE 2019: VIII International Conference on Computational Methods in Marine Engineering*, pages 201–212, 2019

6. M. Gadalla, M. Tezzele, A. Mola, and G. Rozza. BladeX: Python Blade Morphing. *The Journal of Open Source Software*, 4(34):1203, 2019

7. N. Demo, M. Tezzele, G. Gustin, G. Lavini, and G. Rozza. Shape optimization by means of proper orthogonal decomposition and dynamic mode decomposition. In *Technology and Science for the Ships of the Future: Proceedings of NAV 2018: 19th International Conference on Ship & Maritime Research*, pages 212–219. IOS Press, 2018

8. M. Tezzele, F. Salmoiraghi, A. Mola, and G. Rozza. Dimension reduction in heterogeneous parametric spaces with application to naval engineering shape design problems. *Advanced Modeling and Simulation in Engineering Sciences*, 5(1):25, Sep 2018

9. M. Tezzele, N. Demo, M. Gadalla, A. Mola, and G. Rozza. Model order reduction by means of active subspaces and dynamic mode decomposition for parametric hull shape design hydrodynamics. In *Technology and Science for the Ships of the Future: Proceedings of NAV 2018: 19th International Conference on Ship & Maritime Research*, pages 569–576. IOS Press, 2018

10. M. Tezzele, F. Ballarin, and G. Rozza. Combined parameter and model reduction of cardiovascular problems by means of active subspaces and POD-Galerkin methods. In D. Boffi, L. F. Pavarino, G. Rozza, S. Scacchi, and C. Vergara, editors, *Mathematical and Numerical Modeling of the Cardiovascular System and Applications*, pages 185–207. Springer International Publishing, 2018

11. M. Tezzele, N. Demo, A. Mola, and G. Rozza. An integrated data-driven computational pipeline with model order reduction for industrial and applied mathematics. *Submitted, Special Volume ECMI*, 2018

12. N. Demo, M. Tezzele, A. Mola, and G. Rozza. An efficient shape parametrisation by free-form deformation enhanced by active subspace for hull hydrodynamic ship design problems in open source environment. In *The 28th International Ocean and Polar Engineering Conference*, 2018

13. N. Demo, M. Tezzele, and G. Rozza. PyDMD: Python Dynamic Mode Decomposition. *The Journal of Open Source Software*, 3(22):530, 2018

14. N. Demo, M. Tezzele, and G. Rozza. EZyRB: Easy Reduced Basis method. *The Journal of Open Source Software*, 3(24):661, 2018

15. F. Garotta, N. Demo, M. Tezzele, M. Carraturo, A. Reali, and G. Rozza. Reduced Order Isogeometric Analysis Approach for PDEs in Parametrized Domains. *Submitted, QUIET special volume*, 2018

16. G. Rozza, M. H. Malik, N. Demo, M. Tezzele, M. Girfoglio, G. Stabile, and A. Mola. Advances in Reduced Order Methods for Parametric Industrial Problems in Computational Fluid Dynamics. In R. Owen, R. de Borst, J. Reese, and P. Chris, editors, *ECCOMAS ECFD 7 - Proceedings of 6th European Conference on Computational Mechanics (ECCM 6) and 7th European Conference on Computational Fluid Dynamics (ECFD 7)*, pages 59–76, Glasgow, UK, 2018

17. F. Salmoiraghi, F. Ballarin, G. Corsi, A. Mola, M. Tezzele, and G. Rozza. Advances in geometrical parametrization and reduced order models and methods for computational fluid dynamics problems in applied sciences and engineering: Overview and perspectives. *ECCOMAS Congress 2016 - Proceedings of the 7th European Congress on Computational Methods in Applied Sciences and Engineering*, 1:1013–1031, 2016

Conferences and Workshops

1. ROMs in CFD (talks): Summer School on Reduced Order Methods in Computational Fluid Dynamics, 8–12 July 2019, SISSA, Trieste, Italy.

2. MARINE 2019 (talk): VIII International Conference on Computational Methods in Marine Engineering, 13–15 May 2019, Gothenburg, Sweden.

3. NAV 2018 (talk): 19th International Conference on Ship & Maritime Research, 20–22 June 2018, Trieste, Italy.

4. MoRePaS 2018 (poster): Model Reduction of Parametrized Systems IV, 10–13 April 2018, Nantes, France.

5. ADMOS 2017 (talk): International Conference on Adaptive Modeling and Simulations, 26–28 June 2017, Verbania, Italy.

6. QUIET 2017 (poster): Quantification of Uncertainty: Improving Efficiency and Technology, 18–21 July 2017, Trieste, Italy.

7. ME3 Conference at Institut Henri-Poincaré (poster): Recent developments in numerical methods for model reduction, 7–10 November 2016, Paris, France.

8. Introductory school at IESC: Numerical methods for PDEs, 5–9 September 2016, Cargese, France.

9. COST EU-MORNET (talk): Reduced Order Methods in Computational Fluid Dynamics: state of the art and perspectives, 22–23 February 2016, SISSA, Trieste, Italy.

Awards and Funding

1. Winner of DSWeb 2019 Software Contest Tutorials on Dynamical Systems Software - Junior Faculty Category - PyDMD Package, in collaboration with Nicola Demo. Announced at SIAM Conference on Applications of Dynamical Systems in Snowbird.

2. 2018–2019 MISTI MIT-Italy FVG Project: Multi-disciplinary Ship Design by Reduced Order Models and Machine Learning at MIT and SISSA.

3. SISSA: Master thesis fellowship for pre-graduate students (2014).

Research Projects I Have Been Involved in

1. H2020 ERC CoG 2015 AROMA-CFD project 681447 "Advanced Reduced Order Methods with Applications in Computational Fluid Dynamics" P.I. Gianluigi Rozza, supported by European Union Funding for Research and Innovation — Horizon 2020 Program — in the framework of European Research Council Executive Agency.

2. SOPHYA, "Seakeeping Of Planing Hull YAchts", supported by Regione FVG, POR-FESR 2014-2020, Piano Operativo Regionale Fondo Europeo per lo Sviluppo Regionale.

3. PRELICA, "Advanced methodologies for hydro-acoustic design of naval propulsion", supported by Regione FVG, POR-FESR 2014-2020, Piano Operativo Regionale Fondo Europeo per lo Sviluppo Regionale.

4. HEaD - Higher Education and Development, "Shape optimization of bow and stern by mean of parametric algorithms and reduced order methods" in collaboration with Fincantieri, supported by Regione FVG, European Social Fund FSE 2014-2020.

5. INdAM GNCS 2018: "Tecniche di riduzione di modello per le applicazioni mediche".

6. INdAM GNCS 2019: "Advanced intrusive and non-intrusive model order reduction techniques and applications".