Ph. D thesis:

- "Numerical Simulation of the Unsteady Aerodynamics of Flapping Flight," University of Genoa, 2009. For a digital copy, please refer to http://www3.dicca.unige.it/guerrero/pubs/myphdthesis.html

Webpage:

- http://www.dicat.unige.it/guerrero/index_clean.html

Peer-Reviewed Journal Articles:

- C. Caccia, G. Bailardi, **J. Guerrero**, D. Marini, "Fluid Structure Interaction in Marine Applications Using Open-Source Tools," Technology and Science for the Ships of the Future. Proceedings of NAV 2022: 20th International Conference on Ship & Maritime Research. Progress in Marine Science and Technology, Volume 6, pp. 486-493, Sep. 2022. https://doi.org/10.3233/PMST220058
- **J. Guerrero**, "Pressurized turbulent premixed CH4/H2/air flame validation using OpenFOAM," AIP Advances 12, 075103 (2022); https://doi.org/10.1063/5.0098715
- M. Cavaiola, S. Olivieri, **J. Guerrero**, A. Mazzino, M. E. Rosti, "Role of barriers in the airborne spread of virus-containing droplets: A study based on high-resolution direct numerical simulations," Physics of Fluids 34, 015104, 2022. https://doi.org/10.1063/5.0072840
- H. Kutkan, **J. Guerrero**, "Turbulent Premixed Flame Modeling Using the Algebraic Flame Surface Wrinkling Model: A Comparative Study between OpenFOAM and Ansys Fluent," Fluids, 6(12), 462, Dec. 2021. https://doi.org/10.3390/fluids6120462
- E. Alinovi, **J. Guerrero**, "FLUBIO – An unstructured, parallel, finite-volume based Navier-Stokes and convection-diffusion like equations solver for teaching and research purposes," SoftwareX, Volume 13, January 2021, 100655. https://doi.org/10.1016/j.softx.2020.100655
- **J. Guerrero**, M. Sanguineti, K. Wittkowski, "Variable cant angle winglets for improvement of aircraft flight performance," Meccanica, Sep. 2020. https://doi.org/10.1007/s11012-020-01230-1
- **J. Guerrero**, L. Mantelli, S. Naqvi, "Cloud based CAD parametrization for design space exploration and design optimization in CFD," Fluids, 5(1), 36, Mar. 2020. https://doi.org/10.3390/fluids5010036
- E. Daymo, A. Tonkovich, M. Hettel, **J. Guerrero**, "Accelerating Reactor Development with Accessible Simulation and Automated Optimization Tools," Chemical Engineering & Processing – Process Intensification Journal, vol. 142, 107582, Aug. 2019. https://doi.org/10.1016/j.cep.2019.107582
- A. Oleksiak, L. Lefevre, P. Alonso, G. Da Costa, V. De Maio, N. Frasheri, V. M. Garcia, **J. Guerrero**, S. Lafond, A. Lastovetsky, R. Reddy Manumachu, B. Muite, A.-C. Orgerie, W. Piatek, J.-M. Pierson, R. Prodan, P. Stolf, E. Sheme, S. Varrette, "Energy aware ultrascale systems," Ultrascale Computing Systems. Chapter 5, pp. 127-188, Jan. 2019. https://doi.org/10.1049/PBPC024E_ch5
- **J. Guerrero**, M. Sanguineti, K. Wittkowski, "CFD study of the impact of variable cant angle winglets on total drag reduction," Aerospace Journal - Special issue on Bio-Inspired Aerospace Systems, 5(4), 126, Sep. 2018. https://doi.org/10.3390/aerospace5040126
- F. Aqilah, M. Islam, F. Juretic, **J. Guerrero**, D. Wood, F. Ani, "Study of mesh quality improvement for CFD analysis of an airfoil," IIUM Engineering Journal, vol. 19, no. 2, pp. 203-212, Dec. 2018. https://doi.org/10.31436/iiumej.v19i2.905
- **J. Guerrero**, A. Cominetti, J. Pralits, D. Villa, "Surrogate-based optimization using an open-source framework: the bulbous bow shape optimization case," Mathematical and computational applications, 23(4), 60, Oct. 2018. https://doi.org/10.3390/mca23040060
- **J. Guerrero**, "Wake topology and aerodynamic performance of heaving wings," Flight Physics – Models, Techniques and Technologies, IntechOpen, Chapter 7, Dec. 2017. http://dx.doi.org/10.5772/intechopen.71517
- **J. Guerrero**, C. Pacioselli, J. O. Pralits, F. Negrello, P. Silvestri, A. Lucifredi, A. Bottaro, "Erratum to: Preliminary design of a small-sized flapping UAV: I. Aerodynamic performance and static longitudinal stability," Meccanica 52 (9), pp. 2245-2245, Jul. 2017. https://doi.org/10.1007/s11012-016-0571-3
- F. Negrello, P. Silvestri, A. Lucifredi, **J. Guerrero**, A. Bottaro, "Preliminary design of a small-sized flapping UAV. II. Kinematic and structural aspects," Meccanica, 51(6), pp. 1369-1385, Jun. 2016. https://doi.org/10.1007/s11012-015-0309-7

- **J. Guerrero**, C. Pacioselli, J. O. Pralits, F. Negrello, P. Silvestri, A. Lucifredi, A. Bottaro, "Preliminary design of a small-sized flapping UAV. I. Aerodynamic performance and static longitudinal stability," Meccanica 51 (6), pp. 1343-1367, Jun. 2016. https://doi.org/10.1007/s11012-015-0298-6
- A. Orchini, A. Mazzino, **J. Guerrero**, R. Festa, C. Boragno, "Flapping States of an Elastically Anchored Plate in a Uniform Flow with Applications to Energy Harvesting by Fluid-Structure Interaction," Physics of Fluids, 25, 097105, 2013. https://doi.org/10.1063/1.4821808
- **J. Guerrero**, D. Maestro, A. Bottaro, "Biomimetic Spiroid Winglets for Lift and Drag Control," Comptes Rendus Mécanique, vol. 340, Issues 1-2, pp. 67-80, Jan.-Feb. 2011. https://doi.org/10.1016/j.crme.2011.11.007
- **J. Guerrero**, "Wake Signature of Finite-Span Flapping Rigid Wings," High-Performance Computing in Science and Engineering '10: Transactions of High-Performance Computing Center, Stuttgart (HLRS) 2010, pp. 407-427, 2011. https://doi.org/10.1007/978-3-642-15748-6_31
- **J. Guerrero**, "Wake Signature and Strouhal Number Dependence of Finite-Span Root Flapping Rigid Wings," Journal of Bionic Engineering, vol. 7, Supplement 4, pp. S109-S122, Dec. 2010. https://doi.org/10.1016/S1672-6529(09)60224-9
- **J. Guerrero**, "Aerodynamic Performance of Cambered Heaving Airfoils," AIAA Journal, vol. 48, no. 11, pp. 2694-2698, Nov. 2010. https://doi.org/10.2514/1.J050036
- **J. Guerrero**, "Effect of Cambering on the Aerodynamic Performance of Heaving Airfoils," Journal of Bionic Engineering, vol. 6, Issue 4, pp. 398-407, Dec. 2009. https://doi.org/10.1016/S1672-6529(08)60134-1

Articles Submitted, Under Review or In Preparation:

- P. Silvestri, A. Canepa, **J. Guerrero**, "Design of a mechanism for roll damping and stabilization of yachts at anchor: hydrodynamic, kinematic design and structural study," under review, submitted to the Journal of Marine Science and Technology.

Research Highlights, Media Appearances and Book Contributions:

- M. Cavaiola, S. Olivieri, **J. Guerrero**, A. Mazzino, M. E. Rosti, "Direct numerical simulations show deficiencies in barriers against airborne viral spread," AIP Scilight, 07 January 2022. https://doi.org/10.1063/10.0009041
- M. Giachi, **J. Guerrero**, J. Pralits, "La CFD come strumento predittivo in ambito sportivo per definire i regolamenti tecnici del futuro" (CFD as a predictive tool in the sports field to define the technical requirements of the future), A & C Analisi e Calcolo (Italian magazine), No. 96, cover page and pp. 10-11, Jan-Feb. 2020.
- A. Bottaro, **J. Guerrero**, J. Pralits, "Modelli matematici per soluzioni innovative" (Mathematical models for innovative solutions), Il sole 24 ore (Italian newspaper), Sanita & Ricerca, p. 1, June 26, 2017.
- **J. Guerrero**, "Box approfondimento 14.1 CFD: esperimenti al computer (Technical box 14.1 CFD: computational experiments), Meccanica dei fluidi III edizione (Fluid Mechanics III edition in Italian). McGraw Hill 2015. ISBN: 9788838615153.
- **J. Guerrero**, D. Maestro, "Biomimetic Spiroid Winglets for Lift and Drag control," HPC-Europa2. Science and supercomputing in Europe. Research Highlights 2011.
- **J. Guerrero**, "Wake Signature and Aerodynamic Performance of Finite-Span Root Flapping Rigid Wings," HPC-Europa2. Science and Supercomputing in Europe. Research Highlights 2009.
- A. Bottaro, J. Favier, **J. Guerrero**, D. Venkataraman, H. Wedin, "Sulla Scia di Icaro" (In the wake of Icaro), *Sapere* (Italian magazine), anno 75, numero 5(1064), pp. 66-77, Oct. 2009. https://hal.archives-ouvertes.fr/hal-01073987

Other Publications (non peer reviewed):

- **J. Guerrero**, "OpenFOAM advanced training. Turbulence modeling in general CFD and OpenFOAM - Theory and applications," figshare. Media, 2022. https://doi.org/10.6084/m9.figshare.19310162
- **J. Guerrero**, "OpenFOAM advanced training. Multi-phase flows modeling in general CFD and OpenFOAM - Theory and applications," figshare. Media, 2022. https://doi.org/10.6084/m9.figshare.19310483

- **J. Guerrero**, "OpenFOAM advanced training. Moving meshes, rigid body motion, adaptive mesh refinement, and overset meshes," figshare. Media, 2022.
  https://doi.org/10.6084/m9.figshare.19310492
- **J. Guerrero**, "DAKOTA-OpenFOAM advanced training. Design of experiments, space exploration, and numerical optimization using Dakota and code coupling Dakota-OpenFOAM," figshare. Media, 2022.
  https://doi.org/10.6084/m9.figshare.19310495
- **J. Guerrero**, "OpenFOAM advanced training. Basic solid modeling for CFD using Onshape and mesh generation using OpenFOAM tools," figshare. Media, 2022.
  https://doi.org/10.6084/m9.figshare.19309760
- **J. Guerrero**, "OpenFOAM advanced training. Introduction to the FVM method. Standard practices in general CFD with applications to OpenFOAM," figshare. Media, 2022.
  https://doi.org/10.6084/m9.figshare.19308740
- **J. Guerrero**, "OpenFOAM Introductory Training," figshare. Media, 2021.
  https://doi.org/10.6084/m9.figshare.16783657
- **J. Guerrero**, "Cloud-based CAD parametrization and image recognition for engineering design work-flows based on OpenFOAM," Wolf Dynamics White Paper 2021-1. January 2021.
- **J. Guerrero**, L. Mantelli, S. Naqvi, "Cloud-Based Parametrization for Design Space Exploration and Design Optimization in Numerical Simulations," Preprints 2020, 2020030150 (doi: 10.20944/preprints202003.0150.v1).
- **J. Guerrero**. "Introduction to Computational Fluid Dynamics: Governing Equations, Turbulence Modeling Introduction, and Finite Volume Discretization Basics," (doi: 10.13140/RG.2.1.1396.4644).
- **J. Guerrero**, M. Sanguineti, K. Wittkowski, "Variable cant angle winglets for improvement of aircraft flight performance," Preprints 2019, 2019070001 (doi: 10.20944/preprints201907.0001.v1).
- **J. Guerrero**, B. K. Muite. "Optimizing Heat Transfer in a Liquid Cooled Computer: Conduction," COST (European Cooperation in Science and Technology) Short-Term Scientific Mission (STSM) Technical Report. 2015.
- A. Orchini, A. Mazzino, **J. Guerrero**, R. Festa, C. Boragno. "Flapping States of an Elastically Anchored Wing in a Uniform Flow," arXiv preprint, arXiv:1202.5390v1 [physics.flu-dyn]. Feb. 2012.

Peer Reviewed Conference Contributions:

- E. Segalerba, J. Pralits, M. Quadrio, **J. Guerrero**, "Comparison of Nasal Anatomies Using Computational Fluid Dynamics," 17th OpenFOAM workshop. Churchill College, University of Cambridge, Cambridge, UK. July 11-14, 2022.
- C. Caccia, G. Bailardi, **J. Guerrero**, D. Marini, "Fluid Structure Interaction in Marine Applications Using Open-Source Tools," 20th International Conference on Ship and Maritime Research. University of Genoa, Genoa, Italy. June 15-17, 2022.
- **J. Guerrero**, E. Alinovi, "A Benchmarking and Comparative Study of Different Linear Solvers and Preconditoners in OpenFOAM, PETSC, and FLUBIO-PETSC," 16th OpenFOAM workshop. University College Dublin, Dublin, Ireland. June 8-11, 2021 (online).
- **J. Guerrero**, L. Mantelli, S. Naqvi, "Cloud-Based Cad Parametrization and Image Recognition For Support of Engineering Design Using Numerical Simulations," 15th OpenFOAM workshop. Virginia Tech, Arlington, Virginia, USA. June 22-26, 2020 (online).
- **J. Guerrero**, "A comparative assessment and benchmarking study of OpenFOAM® overset meshes capabilities," 7th OpenFOAM conference. Berlin, Germany. October 15-17, 2019.
- E. Daymo, **J. Guerrero**, M. Hettel, "Accelerating microreactor development with accessible simulations," International conference on micro reaction technology (IMRET 2018). Karlsruhe, Germany. October 21-24, 2018. Poster presentation.
- **J. Guerrero**, A. Cominetti, J. Pralits, "Shape optimization using an open-source framework: the bulbous bow case," 5th OpenFOAM conference. Frankfurt, Germany. October 17-19, 2017.
- A. Cominetti, **J. Guerrero**, J. Pralits, "Shape optimization using an open-source framework: the bulbous bow case," 12th OpenFOAM workshop. University of Exeter, Exeter. UK. July 24-27, 2017.
- M. Islam, F, Aqilah, F. Juretic, **J. Guerrero**, D. Wood, F. Nasir Ani, "Study of mesh quality improvement for CFD analysis of an airfoil," The 9th International Meeting on Advances in Thermofluids IMAT. UTM, Johor, Malaysia. January 25, 2017.
- **J. Guerrero**, G. Bailardi, H. Kifle, "Visual storytelling and data visualization in numerical simulations," 11th OpenFOAM workshop. Guimaraes, Portugal. June 26-28, 2016.

- **J. Guerrero**, B. K. Muite, "Optimizing cooling in liquid cooled computers: conduction in the rugged POD," Summer School on Transport, Fluids and Mixing. Levico Terme, Trento. Italy. July 19-25, 2015. Poster presentation.
- **J. Guerrero**, G. Bailardi, H. Telib, R. Lyulinetskyy, "An open-source framework for multi-physics simulations, design space exploration and design optimization," 10th OpenFOAM workshop. Ann Arbor, MI. USA. June 29 - July 1, 2015.
- G. Bailardi, **J. Guerrero**, "An open-source framework for CFD optimization: the case of sailing yacht daggerboards," 18th International conference on ships and shipping research – NAV. Lecco, Italy. June 24-26, 2015.
- G. Bailardi, **J. Guerrero**, D. Natali, "On the fluid dynamic design and optimization of sailing yacht hulls and appendages using a complete open-source framework," VI International conference on computational methods in marine engineering – MARINE. Rome, Italy. June 14-16, 2015.
- A. Di Terlizzi, A. Lucifredi, P. Silvestri, A. Canepa, **J. Guerrero**, A. Bottaro. "Kinematic and structural proposal and study of a new mechanism for the stabilization of yachts at anchor by flying fins," The Twelfth International Conference on Condition Monitoring and Machinery Failure Prevention Technologies. CM 2015/MFPT 2015. Oxford, UK. June 9-11, 2015.
- M. Islam, F. Langfeldt, F. Juretic, **J. Guerrero**, D. H. Wood, "CFD Analysis of NACA4415 Airfoil with Gamma-Re-theta Model considering Natural Transition," North American Wind Energy Academy (NAWEA) 2015 Symposium. Virginia Tech. Blacksburg, Virginia, USA. June 9-11, 2015.
- J. M. Nobrega, A. Rajkumar, C. Fernandes, L. L. Ferras, F. Habla, O. Hinrichsen, **J. Guerrero**, O. S. Carneiro, "Using OpenFOAM to Aid the Design of Extrusion Dies for Thermoplastics Profiles," 9th OpenFOAM workshop. Zagreb, Croatia. June 23-26, 2014.
- F. Negrello, P. Silvestri, A. Lucifredi, **J. Guerrero**, A. Bottaro, "Preliminary Design of a Mechanism for Flapping Flight – Durability Analysis and Vibration Modes," The Eleventh International Conference on Condition Monitoring and Machinery Failure Prevention Technologies. Manchester, UK. June 10-12, 2014.
- **J. Guerrero**, C. Pacioselli, J. Pralits, F. Negrello, P. Silvestri, A. Bottaro, "Preliminary design of a Small-Sized Flapping UAV. II. Aerodynamic Performance and Flight Stability," AIMETA Conference. Turin, Italy. September 17-20, 2013.
- F. Negrello, P. Silvestri, A. Lucifredi, **J. Guerrero**, A. Bottaro, "Preliminary design of a Small-Sized Flapping UAV. I. Kinematic and Structural Aspects," AIMETA Conference. Turin, Italy. September 17-20, 2013.
- **J. Guerrero**, "Wake Signature and Strouhal Number Dependence of Finite-Span Flapping Wings," International Conference of Bionic Engineering ICBE. Zhuhai, China. September 14-16, 2010.
- **J. Guerrero**, "Wake Signature and Strouhal Number Dependence of Finite-Span Flapping Wings," Transnational Access Meeting (TAM 2010) HPC-Europa2. CSC-HPC-Europa2, Helsinki, Finland. June 15-17, 2010.
- **J. Guerrero**, "Higher-Order Godunov Schemes on Overlapping Grids," Third International Conference on High Order Non-Oscillatory Methods for Wave Propagation: Algorithms and Applications. University of Trento, Italy. March 30 - April 02, 2009.
- **J. Guerrero**, "Numerical Simulation of the Unsteady Aerodynamics of Flapping Fligh," 10th Teraflop Workshop. Applications and systems for future HPC. HLRS, Universität Stuttgart, Germany. March 16-17, 2009.
- **J. Guerrero**, "Higher-Order Godunov Schemes on Overlapping Grids with Adaptive Mesh Refinement," 5th Transnational Access Meeting (TAM'08) HPC-Europa++. HLRS, Universität Stuttgart, Germany. December 15-18, 2008.
- **J. Guerrero**, "Algebraic Multigrid Methods on Overlapping Grids," MASCOT08 - 8th Meeting on Applied Scientific Computing and Tools, Grid Generation, Approximation and Visualization. CNR-IAC, Rome, Italy. October 23-25, 2008.
- **J. Guerrero**, "CFD Study of Biologically Inspired Flapping/Oscillating Foils in Forward Motion," 1st Peer Training Meeting on Applied Scientific Computing and Tools. CNR-IAC, Rome, Italy. October 21-22, 2008.
- **J. Guerrero**, "Efficient Treatment of Complex Geometries and Moving Bodies using Single-Block and Multi-Block Overlapping Grids," Numerical geometry, grid generation and scientific computing (NUMGRID2008). A.A. Dorodnicyn Computing Center of the Russian Academy of Sciences, Moscow, Russia. June 10-13, 2008.
- **J. Guerrero**, "Efficient Treatment of Complex Geometries and Moving Bodies Using Overlapping Grids," The 10th International Society of Grid Generation (ISGG) Conference on Numerical Grid Generation. IMACS – ISGG. Crete, Greece. September 16-20, 2007.
- **J. Guerrero**, "Higher-Order Godunov Schemes on Overlapping Grids," MASCOT07 - 7th Meeting on Applied Scientific Computing and Tools, Grid Generation, Approximation and Visualization. CNR-IAC, Rome, Italy. September 13-14, 2007.

- **J. Guerrero**, "Overset Composite Grids for the Simulation of Complex Moving Geometries," MASCOT06 - 6th Meeting on Applied Scientific Computing and Tools, Grid Generation, Approximation and Visualization. CNR-IAC, Rome, Italy. October 05-07, 2006.
- **J. Guerrero**, "Overset Composite Grids/Chimera Meshes in a Brief," EUA4X Computational Field Simulation Days @ MASCOT06. CNR-IAC, Rome, Italy. October 06-07, 2006. Poster presentation.

Invited speaker – Non Peer Reviewed contributions – Conferences:

- **J. Guerrero**, "FDA Blood Pump case. A validation benchmark for the next OpenFOAM workshop," First Italian OpenFOAM User Group Meeting. Politecnico di Milano, Milan, USA. October 19, 2022.
- **J. Guerrero**, Luca Mantelli, Sahrish Naqvi, "Cloud-based CAD parametrization for engineering design workflows in OpenFOAM," Fourth Midwest OpenFOAM User Group Meeting. Minneapolis, Minnesota, USA. October 4-5, 2019 (online).
- **J. Guerrero** (invited speaker), "Opportunities and challenges in CFD optimization: Open-Source technology and the Cloud," The sixth symposium on OpenFOAM® in Wind Energy (SOWE). Gotland, Sweden. June 13-14, 2018.
- **J. Guerrero** (invited speaker), "Agile simulations in the era of cloud computing," HPC Day. I trend, le architetture, gli applicativi e i nuovi servizi disponibili per l'elaborazione dati ad alte prestazioni (Trends, architectures, applications and new services available for data processing and high performance). Lerici, Italy. September 26, 2017.
- **J. Guerrero** (invited speaker), "Agile simulations in the era of cloud computing," Workshop in HPC Methods for Engineering. CINECA. Milan, Italy. June 19-21, 2017.
- **J. Guerrero**, H. Telib, "Design optimization and design exploration using an open-source framework on HPC facilities," Workshop in HPC Methods for Engineering. CINECA. Milan, Italy. June 17-19, 2015.
- **J. Guerrero**, G. Bailardi, "An Open-Source Framework for Multi-Physics Simulations and Optimization," Workshop in HPC enabling of OpenFOAM for CFD applications. Bologna, Italy. March 25-27, 2015.

Training sessions delivered at conferences:

- **J. Guerrero**, "Optimization methods in CFD - An open-source approach using DAKOTA and OpenFOAM," training session delivered at the 16th OpenFOAM workshop. University College Dublin, Dublin, Ireland.. June 8-11, 2021 (online).
- **J. Guerrero**, "A Crash Introduction to the Finite Volume Method and Discretization Schemes in OpenFOAM," training session delivered at the 15th OpenFOAM workshop. Virginia Tech, Arlington, Virginia, USA. June 22-26, 2020 (online).
- **J. Guerrero**, "The grammar of overset meshes in OpenFOAM®," Fourth Midwest OpenFOAM User Group Meeting. Minneapolis, Minnesota, USA. October 4-5, 2019 (online).
- **J. Guerrero**, "Design of experiments, space exploration, and numerical optimization using DAKOTA and OpenFOAM®," training session delivered at the 11th OpenFOAM workshop. University of Minho, Guimaraes, Portugal. June 26-28, 2016.

Seminars delivered:

- **J. Guerrero**, "Numerical simulations in biofluid dynamics and biomedical engineering. Eye, Nose, and Blood pump applications," LMFA Laboratoire de Mecanique des Fluides et d'Acoustique, University of Lyon, Lyon, France. July 8, 2022. http://lmfa.ec-lyon.fr/spip.php?article2069&lang=fr
- **J. Guerrero**, E. Alinovi, "FLUBIO-PETSC. Yet another CFD solver – In turbulent times –," Computational Rheology Kaizen Meetings. University of Minho, Guimaraes, Portugal. March 11, 2021 (online).
- **J. Guerrero**, "A Crash Introduction to the Finite Volume Method and Discretization Schemes in OpenFOAM," Computational Rheology Kaizen Meetings. University of Minho, Guimaraes, Portugal. June 19, 2020 (online).

- **J. Guerrero**, "Visual storytelling and data visualization in numerical simulations," University of Genoa. Department of Civil, Chemical, and Environmental Engineering. Genoa, Italy. December 11, 2015.
- **J. Guerrero**, "An open-source framework for multi-physics simulations and design exploration/optimization," University of Tartu. Institute of Computer Science. Tartu, Estonia. May 20, 2015.
- **J. Guerrero**, "An open-source framework for multi-physics simulations and design exploration/optimization," Tallinn University of Technology. Mechanical Engineering Department. Tallinn, Estonia. May 22, 2015.