Stanford



Gianluca Iaccarino

Robert Bosch Chair of the Department of Mechanical Engineering and Joseph L. and Roberta M. Rodgers Professor

Curriculum Vitae available Online

CONTACT INFORMATION

- **Administrator**

  Hong Clark - Executive Assistant

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Bio

BIO

I am the Robert Bosch Chair and a professor in the Mechanical Engineering Department (https://me.stanford.edu).

I received my PhD in Italy from the Politecnico di Bari in 2005 and have worked for several years at the Center for Turbulence Research (NASA Ames & Stanford) before joining the faculty at Stanford in 2007. Since 2014 I am the Director of the PSAAP Center at Stanford, funded by the US Department of Energy: a $20M research Center focused on multiphysics simulations, uncertainty quantification and exascale computing (http://exascale.stanford.edu).

In 2010, I received the Presidential Early Career Award for Scientists and Engineers (PECASE) award from President Obama. in the last couple of years, I received best paper awards from AIAA, ASME IMECE and Turbo Expo Conferences.

Over the years, my interests in research and teaching have touched many topics, but always revolved around the use of computing and data to solve problems in energy, biomedicine, aerodynamics, propulsion, design.

ACADEMIC APPOINTMENTS

- Professor, Mechanical Engineering
- Member, Bio-X
- Affiliate, Precourt Institute for Energy
- Member, Institute for Computational and Mathematical Engineering (ICME)
- Affiliate, Stanford Woods Institute for the Environment

ADMINISTRATIVE APPOINTMENTS

- Chair, Mechanical Engineering Department, (2024- present)
- Senior Visiting Member, Institute for Advanced Studies, HKUST (Hong Kong), (2023-2023)
- Visiting Fellow, University of Melbourne (Australia), (2022-2023)
- Visiting Professor, Universita' di Napoli (Italy), (2022-2023)

- Director, ICME Institute for Computational and Mathematical Engineering, (2018-2024)
- Visiting Professor, Ecole Centrale Paris, (2016-2016)
- Director, Exascale Computing Engineering Center - PSAAP II, (2014- present)
- Visiting Professor, Technical University of Munich, (2011-2011)
- Director, TFSA Thermal and Fluid Sciences Industrial Affiliates Program, (2010-2018)
- Professor, Mechanical Engineering Department, Stanford, (2007- present)
- Postdoctoral Fellow, Mechanical Engineering Department, Stanford, (2005-2007)
- Research Engineer, CTR, Center for Turbulence Research, (1998-2005)
- Research Scientist, CIRA, Italian Center for Aerospace Research, (1993-1998)

HONORS AND AWARDS

- USACM Thomas J.R. Hughes Medal, United States Association for Computational Mechanics (USACM) (2025)
- Fellow of the American Physical Society (elected), APS (2019)
- TUM Ambassador, Technical University of Munich (2018)
- ASME IMECE Best Paper Award, ASME (2017)
- Jefferson Goblet Award, Best Paper, AIAA (2017)
- Turbo Expo Best Paper Award, ASME (2016)
- William R. and Inez Kerr Bell Faculty Scholar, Stanford University (2014)
- Gold Medal Honoring Italians Abroad, City of Piano di Sorrento (Italy) (2013)
- Associate Fellow of the American Institute of Aeronautics and Astronautics, AIAA (2011)
- Presidential Early Career Award for Scientists and Engineers, The White House & US Department of Energy (2010)
- Humboldt Fellowship, Humboldt Research Fellowship Program (2009)
- Terman Fellow, Stanford University (2007)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Guest Editor, International Journal of Uncertainty Quantification (2019 - present)
- Associate Editor, Computers and Fluids (2018 - present)
- Associate Editor, Flow, Turbulence & Combustion (2015 - present)
- Associate Editor, Journal of Computational Physics (2014 - present)
- Co-Chair, APS Division of Fluid Dynamics Conference (2014 - 2014)
- AdCom, Advisory Committee to the Chair, Mechanical Engineer Department, Stanford (2013 - 2018)
- Associate Editor, ASME Applied Mechanics Review (2013 - 2017)
- General Chair (elected), AIAA XVI Non-Deterministic Approaches (2013 - 2013)
- Technical Chair (elected), AIAA XV Non-Deterministic Approaches (2013 - 2013)
- Associate Fellow, AIAA (2012 - present)
- Member, SIAM, ASME, AIAA, APS (2010 - present)
- Non-Deterministic Approaches Technical Committee, AIAA (2010 - present)
- Member of the Board of Directors, Cascade Technologies Inc (2000 - present)

PROGRAM AFFILIATIONS

- Stanford SystemX Alliance

PROFESSIONAL EDUCATION

- PhD, Politecnico di Bari, Italy , Mechanical Engineering (2005)
- MS, University di Napoli, Italy , Aeronautical Engineering (1993)
- BS, University di Napoli, Italy , Aeronautical Engineering (1992)

PATENTS

- ES Shaqfeh, G Iaccarino, P Shah. "United States Patent App. 15/435,112 Methods and Systems for Simulating Nanoparticle Flux", Leland Stanford Junior University, Sep 14, 2017

LINKS

- My Path: https://engineering.stanford.edu/magazine/gianluca-iaccarino-dont-be-afraid-non-linear-career-path
- Google Scholar: https://scholar.google.com/citations?hl=en&user=1cy-HoEAAAAJ&view_op=list_works&sortby=pubdate
- PSAAP Center at Stanford: https://insieme.stanford.edu
- ICME: https://icme.stanford.edu
- Mechanical Engineering Dept.: https://me.stanford.edu/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Computing and data for energy, health and engineering

Challenges in energy sciences, green technology, transportation, and in general, engineering design and prototyping are routinely tackled using numerical simulations and physical testing. Computations barely feasible two decades ago on the largest available supercomputers, have now become routine using turnkey commercial software running on a laptop. Demands on the analysis of new engineering systems are becoming more complex and multidisciplinary in nature, but exascale-ready computers are on the horizon. What will be the next frontier? Can we channel this enormous power into an increased ability to simulate and, ultimately, to predict, design and control? In my opinion two roadblocks loom ahead: the development of credible models for increasingly complex multi-disciplinary engineering applications and the design of algorithms and computational strategies to cope with real-world uncertainty.

My research objective is to pursue concerted innovations in physical modeling, numerical analysis, data fusion, probabilistic methods, optimization and scientific computing to fundamentally change our present approach to engineering simulations relevant to broad areas of fluid mechanics, transport phenomena and energy systems. The key realization is that computational engineering has largely ignored natural variability, lack of knowledge and randomness, targeting an idealized deterministic world. Embracing stochastic scientific computing and data/algorithms fusion will enable us to minimize the impact of uncertainties by designing control and optimization strategies that are robust and adaptive. This goal can only be accomplished by developing innovative computational algorithms and new, physics-based models that explicitly represent the effect of limited knowledge on the quantity of interest.

Multidisciplinary Teaching

I consider the classical boundaries between disciplines outdated and counterproductive in seeking innovative solutions to real-world problems. The design of wind turbines, biomedical devices, jet engines, electronic units, and almost every other engineering system requires the analysis of their flow, thermal, and structural characteristics to ensure optimal performance and safety. The continuing growth of computer power and the emergence of general-purpose engineering software has fostered the use of computational analysis as a complement to experimental testing in multiphysics

settings. Virtual prototyping is a staple of modern engineering practice! I have designed a new undergraduate course as an introduction to Computational Engineering, covering theory and practice across multidisciplanary applications. The emphasis is on geometry modeling, mesh generation, solution strategy and post-processing for diverse applications. Using classical flow/thermal/structural problems, the course develops the essential concepts of Verification and Validation for engineering simulations, providing the basis for assessing the accuracy of the results.

PROJECTS

- PSAAP Project - Stanford

Teaching

COURSES

2026-27

- Computational Engineering: ME 123 (Spr)
- Computational Methods in Fluid Mechanics: ME 469 (Spr)
- Introduction to Mechanical Engineering: ME 1N (Aut)
- Linear Algebra with Application to Engineering Computations: CME 200, ME 300A (Aut)

2025-26

- Linear Algebra with Application to Engineering Computations: CME 200, ME 300A (Aut)

2024-25

- Computational Engineering: ME 123 (Aut)

2023-24

- Computational Engineering: ME 123 (Spr)
- First Year Seminar Series: CME 300 (Aut)
- Linear Algebra with Application to Engineering Computations: CME 200, ME 300A (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Bassem Akoush, Max Beeman, James Hansen, Brian Munguía, Christopher Williams

Postdoctoral Faculty Sponsor

Teresa Salomone

Doctoral Dissertation Advisor (AC)

Junmiao Hu, Larry Marshall

Doctoral Dissertation Co-Advisor (AC)

Ayya Alieva, Chloe Choi, Suyeon Jeong, Beverley Yeo

Master's Program Advisor

Jonathan John, Saurabh Madaan

Doctoral (Program)

Caleb Redshaw

Publications

PUBLICATIONS

- **Thermal expansion-driven laser ignition in a gas subscale rocket combustor** *COMBUSTION AND FLAME*
  Brouzet, D., Rossinelli, D., Zahtila, T., Voci, A., Strelau, R., Warner, A., Gejji, R. M., Slabaugh, C. D., Iaccarino, G.
  2026; 284

- **Learning aerodynamics for the control of flying humanoid robots.** *Communications engineering*
  Paolino, A., Nava, G., Di Natale, F., Bergonti, F., Vanteddu, P. R., Grassi, D., Riccobene, L., Zanotti, A., Tognaccini, R., Iaccarino, G., Pucci, D.
  2025; 4 (1): 111

- **Modeling of uncertainties from spanwise asymmetries in upstream conditions and measurement plane location for flow past a circular cylinder confined within a duct** *PHYSICAL REVIEW FLUIDS*
  Lu, W., Zahtila, T., Chan, L., Nguyen, Q., Lei, C., Iaccarino, G., Ooi, A.
  2025; 10 (6)

- **A systematic dataset generation technique applied to data-driven automotive aerodynamics** *APL MACHINE LEARNING*
  Benjamin, M., Iaccarino, G.
  2025; 3 (1)

- **Surrogate models for multiregime flow problems** *PHYSICAL REVIEW FLUIDS*
  Lee, J., Chan, L., Zahtila, T., Lu, W., Iaccarino, G., Ooi, A.
  2025; 10 (2)

- **A physics-informed machine learning model for the prediction of drop breakup in two-phase flows** *INTERNATIONAL JOURNAL OF MULTIPHASE FLOW*
  Cundy, C., Mirjalili, S., Laurent, C., Ermon, S., Iaccarino, G., Mani, A.
  2024; 180

- **Computational Study of Laser-Induced Modes of Ignition in a Coflow Combustor** *FLOW TURBULENCE AND COMBUSTION*
  Passiatore, D., Wang, J. M., Rossinelli, D., Di Renzo, M., Iaccarino, G.
  2024

- **Laser-induced indirect ignition of non-premixed turbulent shear layers** *COMBUSTION AND FLAME*
  Wang, J. M., Di Renzo, M., Iaccarino, G., Wang, H., Urzay, J.
  2024; 264

- **Uncertainty quantification in autoencoders predictions: Applications in aerodynamics** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Saetta, E., Tognaccini, R., Iaccarino, G.
  2024; 506

- **Large-scale in-silico analysis of CSF dynamics within the subarachnoid space of the optic nerve.** *Fluids and barriers of the CNS*
  Rossinelli, D., Fourestey, G., Killer, H. E., Neutzner, A., Iaccarino, G., Remonda, L., Berberat, J.
  2024; 21 (1): 20

- **Toward accelerated data-driven Rayleigh-Bénard convection simulations.** *The European physical journal. E, Soft matter*
  Alieva, A., Hoyer, S., Brenner, M., Iaccarino, G., Norgaard, P.
  2023; 46 (7): 64

- **Neural networks for large eddy simulations of wall-bounded turbulence: numerical experiments and challenges.** *The European physical journal. E, Soft matter*
  Benjamin, M., Domino, S. P., Iaccarino, G.
  2023; 46 (7): 55

- **Differentiable Control for Adaptive Wake Steering**
  Adcock, C., Iaccarino, G., King, J., IEEE
  IEEE.2023: 165-170

- **SIMULTANEOUS IDENTIFICATION AND DENOISING OF DYNAMICAL SYSTEMS** *SIAM JOURNAL ON SCIENTIFIC COMPUTING*

Hokanson, J. M., Iaccarino, G., Doostan, A.
2023; 45 (4): A1413-A1437

- **Machine Learning to Predict Aerodynamic Stall** *INTERNATIONAL JOURNAL OF COMPUTATIONAL FLUID DYNAMICS*
  Saetta, E., Tognaccini, R., Iaccarino, G.
  2022; 36 (7): 641-654
- **Spinning-enabled wireless amphibious origami millirobot.** *Nature communications*
  Ze, Q., Wu, S., Dai, J., Leanza, S., Ikeda, G., Yang, P. C., Iaccarino, G., Zhao, R. R.
  2022; 13 (1): 3118
- **Task-parallel in situ temporal compression of large-scale computational fluid dynamics data** *INTERNATIONAL JOURNAL OF HIGH PERFORMANCE COMPUTING APPLICATIONS*
  Pacella, H., Dunton, A., Doostan, A., Iaccarino, G.
  2022
- **When Are Allowables Conservative?** *AIAA JOURNAL*
  del Rosario, Z., Fenrich, R. W., Iaccarino, G.
  2021; 59 (5): 1760-1772
- **Extending bluff-and-fix estimates for polynomial chaos expansions** *JOURNAL OF COMPUTATIONAL SCIENCE*
  Lyman, L., Iaccarino, G.
  2021; 50
- **Learning to differentiate** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Alund, O., Iaccarino, G., Nordstrom, J.
  2021; 424
- **Extending bluff-and-fix estimates for polynomial chaos expansions** *Journal of Computational Science*
  Lyman, L., Iaccarino, G.
  2021; 50: 101287
- **Pass-efficient methods for compression of high-dimensional turbulent flow data** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Dunton, A. M., Jofre, L., Iaccarino, G., Doostan, A.
  2020; 423
- **A benchmark for particle-laden turbulent duct flow: A joint computational and experimental study** *INTERNATIONAL JOURNAL OF MULTIPHASE FLOW*
  Esmaily, M., Villafane, L., Banko, A. J., Iaccarino, G., Eaton, J. K., Mani, A.
  2020; 132
- **Design exploration and optimization under uncertainty** *PHYSICS OF FLUIDS*
  Mishra, A., Mukhopadhaya, J., Alonso, J., Iaccarino, G.
  2020; 32 (8)
- **Uncertainty quantification of combustion noise by generalized polynomial chaos and state-space models** *COMBUSTION AND FLAME*
  Silva, C. F., Pettersson, P., Iaccarino, G., Ihme, M.
  2020; 217: 113–30
- **Data-driven dimensional analysis of heat transfer in irradiated particle-laden turbulent flow** *INTERNATIONAL JOURNAL OF MULTIPHASE FLOW*
  Jofre, L., del Rosario, Z. R., Iaccarino, G.
  2020; 125
- **Bi-fidelity approximation for uncertainty quantification and sensitivity analysis of irradiated particle-laden turbulence** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Fairbanks, H. R., Jofre, L., Geraci, G., Iaccarino, G., Doostan, A.
  2020; 402
- **MULTILEVEL MONTE CARLO SAMPLING ON HETEROGENEOUS COMPUTER ARCHITECTURES** *INTERNATIONAL JOURNAL FOR UNCERTAINTY QUANTIFICATION*

Adcock, C., Ye, Y., Jofre, L., Laccarino, G.
2020; 10 (6): 575–94

- **FOREWORD: SPECIAL ISSUE ON MULTILEVEL-MULTIFIDELITY APPROACHES FOR UNCERTAINTY QUANTIFICATION** *INTERNATIONAL JOURNAL FOR UNCERTAINTY QUANTIFICATION*
  Eldred, M. S., Geraci, G., Iaccarino, G.
  2020; 10 (6): V-IX
- **MULTIFIDELITY MODELING OF IRRADIATED PARTICLE-LADEN TURBULENCE SUBJECT TO UNCERTAINTY** *INTERNATIONAL JOURNAL FOR UNCERTAINTY QUANTIFICATION*
  Jofre, L., Papadakis, M., Roy, P. T., Aiken, A., Iaccarino, G.
  2020; 10 (6): 499–514
- **Single-point structure tensors in turbulent channel flows with smooth and wavy walls** *PHYSICS OF FLUIDS*
  Yuan, J., Mishra, A., Brereton, G., Iaccarino, G., Vartdal, M.
  2019; 31 (12)
- **Fast Precision Margin with the First-Order Reliability Method**
  del Rosario, Z., Iaccarino, G., Fenrich, R. W.
  AMER INST AERONAUTICS ASTRONAUTICS.2019: 5042–53
- **Simulation of microparticle inhalation in rhesus monkey airways** *PHYSICAL REVIEW FLUIDS*
  Geisler, T. S., Majji, M., Kesavan, J. S., Alstadt, V. J., Shaqfeh, E. S. G., Iaccarino, G.
  2019; 4 (8)
- **Cutting the double loop: Theory and algorithms for reliability-based design optimization with parametric uncertainty** *INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN ENGINEERING*
  del Rosario, Z., Fenrich, R. W., Iaccarino, G.
  2019; 118 (12): 718–40
- **Eigensensitivity analysis of subgrid-scale stresses in large-eddy simulation of a turbulent axisymmetric jet** *INTERNATIONAL JOURNAL OF HEAT AND FLUID FLOW*
  Jofre, L., Domino, S. P., Iaccarino, G.
  2019; 77: 314–35
- **Eigenvector perturbation methodology for uncertainty quantification of turbulence models** *PHYSICAL REVIEW FLUIDS*
  Thompson, R. L., Mishra, A., Iaccarino, G., Edeling, W., Sampaio, L.
  2019; 4 (4)
- **Uncertainty Estimation Module for Turbulence Model Predictions in SU2** *AIAA JOURNAL*
  Mishra, A., Mukhopadhaya, J., Iaccarino, G., Alonso, J.
  2019; 57 (3): 1066–77
- **Estimating uncertainty in homogeneous turbulence evolution due to coarse-graining** *PHYSICS OF FLUIDS*
  Mishra, A., Duraisamy, K., Iaccarino, G.
  2019; 31 (2)
- **Quadrature Strategies for Constructing Polynomial Approximations**
  Seshadri, P., Iaccarino, G., Ghisu, T.
  edited by Canavero, F.
  SPRINGER INTERNATIONAL PUBLISHING AG.2019: 1–25
- **Lurking Variable Detection via Dimensional Analysis** *SIAM-ASA JOURNAL ON UNCERTAINTY QUANTIFICATION*
  del Rosario, Z., Lee, M., Iaccarino, G.
  2019; 7 (1): 232–59
- **Turbulence Modeling in the Age of Data** *ANNUAL REVIEW OF FLUID MECHANICS, VOL 51*
  Duraisamy, K., Iaccarino, G., Xiao, H.
  edited by Davis, S. H., Moin, P.
  2019; 51: 357–77

- **An Alternative Formulation for Design Under Uncertainty** *Advances in Evolutionary and Deterministic Methods for Design, Optimization and Control in Engineering and Sciences*
  Fusi, F., Congedo, P., Geraci, G., Iaccarino, G.
  Springer.2019
- **Immersed-finite-element method for deformable particle suspensions in viscous and viscoelastic media** *PHYSICAL REVIEW E*
  Saadat, A., Guido, C. J., Iaccarino, G., Shaqfeh, E. S. G.
  2018; 98 (6)
- **Hierarchy of models for electrostatic comb-drive actuators in electrolytes** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*
  Dibua, O. L., Ramsurrun, S., Mani, A., Pruitt, B. L., Iaccarino, G.
  2018; 28 (12)
- **Effects of particle polydispersity on radiative heat transfer in particle-laden turbulent flows** *INTERNATIONAL JOURNAL OF MULTIPHASE FLOW*
  Rahmani, M., Geraci, G., Iaccarino, G., Mani, A.
  2018; 104: 42–59
- **Data-Free and Data-Driven RANS Predictions with Quantified Uncertainty** *FLOW TURBULENCE AND COMBUSTION*
  Edeling, W. N., Iaccarino, G., Cinnella, P.
  2018; 100 (3): 593–616
- **A Framework for Characterizing Structural Uncertainty in Large-Eddy Simulation Closures** *FLOW TURBULENCE AND COMBUSTION*
  Jofre, L., Domino, S. P., Iaccarino, G.
  2018; 100 (2): 341–63
- **DEMONSTRATING THE POTENTIAL OF A NOVEL MODEL TO IMPROVE OPEN-LOOP CONTROL OF ELECTROSTATIC COMB-DRIVE ACTUATORS IN ELECTROLYTES**
  Dibua, O., Mukundan, V., Pruitt, B., Mani, A., Iaccarino, G., ASME
  AMER SOC MECHANICAL ENGINEERS.2018
- **Suspension flow through an asymmetric T-junction** *Journal of Fluid Mechanics*
  Manoorkar, S., Krishnan, S., Sedes, O., Shaqfeh, E., Iaccarino, G.
  2018; 844
- **Application of QMU to the design of a nuclear waste storage tank** *NUCLEAR ENGINEERING AND DESIGN*
  Frankel, A., Sharp, D., Iaccarino, G.
  2017; 324: 379–89
- **Uncertainty Estimation for Reynolds-Averaged Navier-Stokes Predictions of High-Speed Aircraft Nozzle Jets** *AIAA JOURNAL*
  Mishra, A., Iaccarino, G.
  2017; 55 (11): 3999–4004
- **Growth of viscoelastic wings and the reduction of particle mobility in a viscoelastic shear flow** *PHYSICAL REVIEW FLUIDS*
  Murch, W. L., Krishnan, S., Shaqfeh, E. S. G., Iaccarino, G.
  2017; 2 (10)
- **Study of the flow unsteadiness in the human airway using large eddy simulation** *PHYSICAL REVIEW FLUIDS*
  Bernate, J. A., Geisler, T. S., Padhy, S., Shaqfeh, E. S. G., Iaccarino, G.
  2017; 2 (8)
- **A low-rank control variate for multilevel Monte Carlo simulation of high-dimensional uncertain systems** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Fairbanks, H. R., Doostan, A., Ketelsen, C., Laccarino, G.
  2017; 341: 121-139
- **Fully resolved viscoelastic particulate simulations using unstructured grids** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Krishnan, S., Shaqfeh, E. S., Iaccarino, G.
  2017; 338: 313-338

- **Polynomial chaos assessment of design tolerances for vortex-induced vibrations of two cylinders in tandem** *AI EDAM-ARTIFICIAL INTELLIGENCE FOR ENGINEERING DESIGN ANALYSIS AND MANUFACTURING*
  Geraci, G., de Tullio, M. D., Iaccarino, G.
  2017; 31 (2): 185-198
- **Efficient control variates for uncertainty quantification of radiation transport** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*
  Frankel, A., Iaccarino, G.
  2017; 189: 398-406
- **Eigenspace perturbations for uncertainty estimation of single-point turbulence closures** *PHYSICAL REVIEW FLUIDS*
  Iaccarino, G., Mishra, A. A., Ghili, S.
  2017; 2 (2)
- **A generalized multi-resolution expansion for uncertainty propagation with application to cardiovascular modeling** *COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING*
  Schiavazzi, D. E., Doostan, A., Iaccarino, G., Marsden, A. L.
  2017; 314: 196-221
- **Vortex-induced rotations of a rigid square cylinder at low Reynolds numbers** *JOURNAL OF FLUID MECHANICS*
  Ryu, S., Iaccarino, G.
  2017; 813: 482-507
- **LEAST SQUARES APPROXIMATION OF POLYNOMIAL CHAOS EXPANSIONS WITH OPTIMIZED GRID POINTS** *SIAM JOURNAL ON SCIENTIFIC COMPUTING*
  Ghili, S., Iaccarino, G.
  2017; 39 (5): A1991-A2019
- **UNCERTAINTY QUANTIFICATION IN LARGE EDDY SIMULATIONS OF A RICH-DOME AVIATION GAS TURBINE**
  Masquelet, M., Van, J., Dord, A., Laskowski, G., Shunn, L., Jofre, L., Iaccarino, G., ASME
  AMER SOC MECHANICAL ENGINEERS.2017
- **Eulerian formulation of the interacting particle representation model of homogeneous turbulence** *PHYSICAL REVIEW FLUIDS*
  Campos, A., Duraisamy, K., Iaccarino, G.
  2016; 1 (6)
- **Convergence of the Bouguer-Beer law for radiation extinction in particulate media** *JOURNAL OF QUANTITATIVE SPECTROSCOPY & RADIATIVE TRANSFER*
  Frankel, A., Iaccarino, G., Mani, A.
  2016; 182: 45-54
- **A segregated explicit algebraic structure-based model for wall-bounded turbulent flows** *INTERNATIONAL JOURNAL OF HEAT AND FLUID FLOW*
  Campos, A., Duraisamy, K., Iaccarino, G.
  2016; 61: 284-297
- **Sensitivity of flow evolution on turbulence structure** *PHYSICAL REVIEW FLUIDS*
  Mishra, A. A., Iaccarino, G., Duraisamy, K.
  2016; 1 (5)
- **A density-matching approach for optimization under uncertainty** *COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING*
  Seshadri, P., Constantine, P., Iaccarino, G., Parks, G.
  2016; 305: 562-578
- **High-order statistics in global sensitivity analysis: Decomposition and model reduction** *COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING*
  Geraci, G., Congedo, P. M., Abgrall, R., Iaccarino, G.
  2016; 301: 80-115
- **Large-Eddy Simulation of a Wing-Body Junction Flow** *AIAA JOURNAL*
  Ryu, S., Emory, M., Iaccarino, G., Campos, A., Duraisamy, K.

2016; 54 (3): 793-804

- **A Novel Weakly-Intrusive Non-linear Multiresolution Framework for Uncertainty Quantification in Hyperbolic Partial Differential Equations** *JOURNAL OF SCIENTIFIC COMPUTING*
  Geraci, G., Congedo, P. M., Abgrall, R., Iaccarino, G.
  2016; 66 (1): 358-405
- **UNCERTAINTY QUANTIFICATION IN TURBOMACHINERY SIMULATIONS**
  Emory, M., Iaccarino, G., Laskowski, G. M., ASME
  AMER SOC MECHANICAL ENGINEERS.2016
- **A BI-FIDELITY APPROACH FOR UNCERTAINTY QUANTIFICATION OF HEAT TRANSFER IN A RECTANGULAR RIBBED CHANNEL**
  Doostan, A., Geraci, G., Iaccarino, G., ASME
  AMER SOC MECHANICAL ENGINEERS.2016
- **TOWARDS A FLEXIBLE IMMERSED BOUNDARY METHOD FOR FLUID/STRUCTURE INTERACTIONS IN TURBOMACHINERY APPLICATIONS**
  Iaccarino, G., Lee, S., Kim, J., Ju, Y., ASME
  AMER SOC MECHANICAL ENGINEERS.2016
- **A comparison of laminar-turbulent boundary-layer transitions induced by deterministic and random oblique waves at Mach 3** *INTERNATIONAL JOURNAL OF HEAT AND FLUID FLOW*
  Ryu, S., Marxen, O., Iaccarino, G.
  2015; 56: 218-232
- **Exploiting active subspaces to quantify uncertainty in the numerical simulation of the HyShot II scramjet** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Constantine, P. G., Emory, M., Larsson, J., Iaccarino, G.
  2015; 302: 1-20
- **Reusing Chebyshev points for polynomial interpolation** *NUMERICAL ALGORITHMS*
  Ghili, S., Iaccarino, G.
  2015; 70 (2): 249-267
- **Quantifying inflow and RANS turbulence model form uncertainties for wind engineering flows** *JOURNAL OF WIND ENGINEERING AND INDUSTRIAL AERODYNAMICS*
  Gorle, C., Garcia-Sanchez, C., Iaccarino, G.
  2015; 144: 202-212
- **An adaptive multiresolution semi-intrusive scheme for UQ in compressible fluid problems** *INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS*
  Abgrall, R., Congedo, P. M., Geraci, G., Iaccarino, G.
  2015; 78 (10): 595-637
- **Uncertainty Quantification for the Trailing-Edge Noise of a Controlled-Diffusion Airfoil** *AIAA JOURNAL*
  CHRISTOPHE, J., Moreau, S., Hamman, C. W., Witteveen, J. A., Iaccarino, G.
  2015; 53 (1): 42-54
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