

## GIANLUCA IACCARINO, PhD

Professor: Mechanical Engineering  
Director: Institute for Computational Mathematics, Stanford University  
Co-Founder: Cascade Technologies Inc.



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### Employment History

2018 – present	Director, Institute for Computational Mathematics, Stanford University, Stanford, CA
2014 – present	Director, Exascale Computing Engineering Center, Stanford CA
2007 – present	Professor, Mechanical Engineering Department, Stanford University, Stanford, CA
2000 – present	co-Founder and Member of the Board of Directors, Cascade Technologies Inc., Palo Alto, CA
1998 – 2007	Research Engineer, NASA & Stanford University, Stanford, CA
1993 – 1998	Research Scientist, CIRA, Italy

### Education

2005	Ph.D.	Computational Mechanics, Politecnico di Bari, Italy
1993	Laurea	Aeronautical Engineering, University of Naples, Italy

### Awards and Honors

- TUM Ambassador, Technical University of Munich 2018
- ASME IMECE Best MEMS Paper Award, November 2017
- AIAA Jefferson Goblet Best Paper Award, January 2017
- ASME Turbo Expo 2016 Best Paper Award, June 2016
- William R. and Inez Kerr Bell Faculty Scholar, Stanford University, January 2014
- Medal Honoring Italians Abroad, Sorrento (NA), 2013
- Associate Fellow, American Institute of Aeronautics and Astronautics, 2012
- Presidential Early Career Award for Science and Engineering (PECASE), September 2010
- Humboldt Fellow, November 2009
- Best paper at the Automotive CFD Conference, Frankfurt, Germany, July 2007
- Terman Fellow, Stanford University, March 2007

### Professional Services

#### Editor

- Associate Editor, Computers & Fluids, 2018-present
- Associate Editor, Journal of Computational Physics, 2014-present
- Associate Editor, Flow, Turbulence & Combustion, 2015-present
- Associate Editor, ASME Applied Mechanics Review, 2013- 2017

#### Management & Organization Responsibility

- Member of the Stanford School of Engineering Executive Committee (EXCOM), 2018-present
- Director, Thermal & Fluid Sciences Industrial Affiliates (TFSA) Program, Stanford 2010-present
- Director, Predictive Science Academic Alliance Program (PSAAP) II, Stanford 2014-present
- Member of the Mechanical Engineering Department Advisory Committee (AdCom), 2013-present
- Member of the Mechanical Engineering Department Graduate Curriculum Committee, 2011-2015
- Member of the Mechanical Engineering Department Strategic Planning Committee, 2007-2015
- Member of the AIAA Non-Deterministic Approaches Technical Committee, 2010-present
- Member of the Center for Turbulence Research Steering Committee, 2006-present
- Member of the Board of Directors, Cascade Technologies Inc, 2000-present

## Conference Organizer

1. SIAM UQ Conference, Minisymposium on Multifidelity Strategies for Uncertainty Analysis, April 2018
2. Thermal and Fluid Science Industrial Affiliates Conference and Workshop, Stanford, CA, February 1-2, 2018.
3. SIAM Computational Science and Engineering, Minisymposium on Uncertainty Quantification, Atlanta, March 2017
4. SIAM Workshop on Parameter Space Dimensional Reduction, Pittsburgh, July 2017
5. Thermal and Fluid Science Industrial Affiliates Conference and Workshop, Stanford, CA, January 329-31, 2017
6. Uncertainty Quantification in Combustion Science, Central Paris, France, March, 2016
7. Thermal and Fluid Science Industrial Affiliates Conference and Workshop, Stanford, CA, February 3-5, 2016
8. Immersed Boundary Method, Lectures Series, INRIA Bordeaux, France, 2016
9. APS/DFD, (co-chair), San Francisco, CA, November 23-25, 2014
10. Thermal and Fluid Science Industrial Affiliates Conference and Workshop, Stanford, CA, February 5-7, 2014.
11. International Workshop on UQ in Fluid Simulations, Bordeaux, France, Dec. 16-18, 2013.
12. General Chair (elected), AIAA XVI Non-Deterministic Approaches, Boston, MA, April 2013.
13. Symposium on "UQ in Engineering Applications," SIAM UQ Conference, , NC, April 2012.
14. Thermal and Fluid Science Industrial Affiliates Conference and Workshop, Stanford, CA, February 12-16, 2013.
15. Technical Chair (elected), AIAA XV Non-Deterministic Approaches, Honolulu, HI, April 2012.
16. Thermal and Fluid Science Industrial Affiliates Conference and Workshop, Stanford, CA, February 8-10, 2012.
17. UQ in Computational Fluid Dynamics, VKI Lecture Series, Brussels, Belgium, October 2011.
18. RTO/ESA Short Course on "UQ in Hypersonics," Bruges, Belgium, May 13-14, 2011.
19. RTO/ESA Short Course on "UQ in High Speed Flows," Stanford, CA April 15-16, 2011.
20. Thermal and Fluid Science Industrial Affiliates Conference and Workshop, Stanford, CA, February 2-5, 2011.

## Other Services

- Reviewer for NSF Graduate Fellowship and NSF Software Institutes, 2014
- Reviewer for the Air Force Computational Mathematics Program, 2012
- Member of the DoE CSGF Fellowship Panel, 2012, 2013, 2014
- Reviewer for the DoE ASCR Program and SCIDAC Institutes, 2012-present
- Reviewer for Swiss National Super-Computing Center (CSCS), 2013-present
- Reviewer for Cineca Italian National Super-Computing Center, 2011-present
- PhD Exam Opponent at KTH Stockholm, Politecnico di Milano, Uppsala University, TU Delft
- Member of PhD Defense Committee at TU Delft, TU Munich, ETH Zurich, UPMC Paris, University of Oslo, University of Padova, University of Naples, Politecnico di Bari

## **Research Funding**

### Current

1. U.S. Department of Energy - "Predictive Simulations of Particle-laden Turbulence in a Radiation Environment – Exascale Computations Engineering Center"
2. Los Alamos National Laboratory - "Uncertainty Quantification in Buoyancy-Driven Turbulent Flows"

### Completed

1. US Department of Defense – "High-Performance Computing in Biomedicine Applications – Particle Deposition in the Lungs" - Army High Performance Computing Research Center
2. National Science Foundation - "Simulations of Particle Sedimentation in Non-Newtonian Fluid"
3. Lawrence Livermore National Laboratory - "Algorithms for uncertainty"
4. Doosan Heavy Industries – "Immersed Boundary Simulations of Fluid Structure Interactions"
5. NASA - "Structure Based Modeling of Three-Dimensional Separated Flows"
6. U.S. Department of Energy - "Large-Scale Uncertainty and Error Analysis in Wind Turbine Applications"
7. U.S. Department of Energy: \$17,000,000 - "Predictive Simulations of Multi-Physics Flow Phenomena"
8. NSF - "MRI-R2: Acquisition of a Hybrid CPU/GPU for Multidisciplinary Studies in Transport Physics with Uncertainty"
9. King Abdullah University of Science and Technology - "Tracking Uncertainties in Computational Modeling"
10. U.S. Department of Energy - "High-Performance Embedded Hybrid Methodology for Uncertainty Analysis"

## Book

P. Pettersson, G. Iaccarino, J. Nordstrom, "Polynomial Chaos Methods for Hyperbolic Partial Differential Equations – Numerical Techniques for Fluid Dynamics Problems under Uncertainty" Springer, ISBN 978-3-319-10713-4, 2015.

## Journal Publications

1. K. Duraisamy, G. Iaccarino, H. Xiao "Turbulence modeling in the age of data", *Annual Review of Fluid Mechanics*, Vol 51, pp. 357-377, 2019
2. P. Seshadri, G. Iaccarino, T. Ghisu "Quadrature Strategies for Constructing Polynomial Approximations", *Uncertainty Modeling for Engineering Applications*, 1-25, 2019
3. A. A. Mishra, K. Duraisamy, G. Iaccarino "Estimating uncertainty in homogeneous turbulence evolution due to coarse-graining", *Physics of Fluids* 31 (2), 025106, 2019
4. A. Saadat, C. J. Guido, G. Iaccarino, ESG Shaqfeh "Immersed-finite-element method for deformable particle suspensions in viscous and viscoelastic media", *Physical Review E* 98 (6), 063316, 2018
5. A. A. Mishra, J Mukhopadhaya, G Iaccarino, J Alonso "Uncertainty Estimation Module for Turbulence Model Predictions in SU2", *AIAA Journal*, 1-12, 2018
6. O. L. Dibua, S. Ramsurrun, A. Mani, B. L. Pruitt, G. Iaccarino "Hierarchy of models for electrostatic comb-drive actuators in electrolytes", *Journal of Micromechanics and Microengineering* 28 (12), 125013, 2018
7. L. Jofre, S. Domino, G. Iaccarino, "A framework for characterizing structural uncertainty in large-eddy simulation closures", *Flow, Turbulence & Combustion*, Vol. 100(2), pp. 341-363, 2018
8. W. Edeling, P. Cinnella, G. Iaccarino, "Data-free and data-driven RANS predictions with quantified uncertainty", *Flow, Turbulence & Combustion*, Vol. 100(3), pp. 593-616, 2018
9. M. Rahmani, G. Geraci, G. Iaccarino, A. Mani "Effect of polydispersity on radiative heat transfer in particle-laden turbulent flows", *International Journal Multiphase Flows*, Vol. 104, pp. 42-59, 2018
10. M. Esmaily L.Jofre A.Mani G.Iaccarino "A scalable geometric multigrid solver for nonsymmetric elliptic systems with application to variable-density flows" *J. Computational Physics* Vol 357, pp. 142-158. 2018
11. L Jofre, S P Domino, G. Iaccarino "A framework for characterizing structural uncertainty in large-eddy simulation closures", *Flow, Turbulence and Combustion*, Vol. 100(2), pp. 341-363, 2018
12. S. Manoorkar, S. Krishnan, ESG Shaqfeh, G.Iaccarino, Gianluca; JF Morris, "Suspension flow through an asymmetric T-junction" *Journal of Fluid Mechanics*, Vol. 844, pp. 147-273, 2018
13. A Frankel, D Sharp, G Iaccarino "Application of QMU to the design of a nuclear waste storage tank" *Nuclear Engineering and Design*, Vol .324, pp. 379-389, 2017
14. A Frankel, G Iaccarino, A Mani "Optical depth in particle-laden turbulent flows" *Journal of Quantitative Spectroscopy and Radiative Transfer*, Vol 201, pp. 20-16, 2017
15. W L Murch, S Krishnan, E SG Shaqfeh, G Iaccarino, "Growth of viscoelastic wings and the reduction of particle mobility in a viscoelastic shear flow", *Physical Review Fluids* Vol 2 (10), pp 103302, 2017
16. S Ghili, G Iaccarino, Least "Squares Approximation of Polynomial Chaos Expansions With Optimized Grid Points" *SIAM Journal on Scientific Computing* Vol 39(5), pp A1991-A2019, 2017
17. J A Bernate, T S Geisler, S Padhy, ESG Shaqfeh, G Iaccarino, "Study of the flow unsteadiness in the human airway using large eddy simulation" *Physical Review Fluids*, Vol 2 (8), pp 083101, 2017
18. H. R Fairbanks, A. Doostan, C. Ketelsen, G. Iaccarino, "A low-rank control variate for multilevel Monte Carlo simulation of high-dimensional uncertain systems" *J. of Computational Physics*, Vol 341, pp 121-139, 2017
19. A. Frankel, G. Iaccarino, "Efficient Control Variates for Uncertainty Quantification of Radiation Transport", *Journal of Quantitative Spectroscopy and Radiative Transfer*, Vol. 189, pp. 398-406, 2017
20. S. Ryu, G. Iaccarino, "Vortex-induced rotations of a rigid square cylinder at low Reynolds numbers", *J. Fluid Mechanics*, Vol. 813, pp. 482-507, 2017
21. A. Frankel, G. Iaccarino, A. Mani, "Convergence of the Bouguer–Beer law for radiation extinction in particulate media", *Journal of Quantitative Spectroscopy and Radiative Transfer*, Vol. 182, pp. 45-54, 2016
22. A. A. Mishra, G. Iaccarino, K. Duraisamy, "Sensitivity of flow evolution on turbulence structure", *Physical Review Fluids* 1 (5), 052402, 2016
23. A. Campos, K. Duraisamy, G. Iaccarino, "A segregated explicit algebraic structure-based model for wall-bounded turbulent flows", *International Journal of Heat and Fluid Flow*, Vol. 61, pp 284-297, 2016

24. A. Campos, K. Duraisamy, G. Iaccarino, "Eulerian formulation of the interacting particle representation model of homogeneous turbulence", *Physics Review Fluid*, Vol. 1(6), 2016.
25. A. Mittal, X. Cen, C. Tong, G. Iaccarino, "A Flexible UQ Framework for Multiphysics Systems", *SIAM Journal of Uncertainty Quantification*, Vol. 4(1), 218-243, 2016
26. P. Seshadri, P. Constantine, G. Iaccarino, G. Parks "A density-matching approach for optimization under uncertainty", *Computer Methods in Applied Mechanics and Engineering*, Vol. 35, pp. 562-578, 2016.
27. S. Ryu, M. Emory, G. Iaccarino, "LES of a Body Junction Flow" *AIAA Journal*, Vol. 54(3), 793-804, 2016.
28. P. Constantine, M. Emory, J. Larsson, G. Iaccarino, "Exploiting Active Subspaces to Quantify Uncertainty in the Numerical Simulation of the HyShot II Scramjet", *Journal of Computational Physics* Vol. 302, pp.1-20, 2016
29. G Geraci, PM Congedo, R Abgrall, G Iaccarino, "High-order statistics in global sensitivity analysis: Decomposition and model reduction", *Computer Methods in Applied Mechanics and Engineering* Vol. 301, pp 80-115, 2016
30. S Ryu, O Marxen, G Iaccarino, "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* Vol. 56, pp 218-232, 2015
31. G. Geraci, P.M. Congedo, R. Abgrall, G. Iaccarino, "A Novel Weakly-Intrusive Non-Linear Multiresolution Framework for Uncertainty Quantification in Hyperbolic Partial Differential Equations", *SIAM Journal of Scientific Computing*, Vol 33, pp. 1-48, 2015.
32. C. Gorle, C. Garcia-Sanchez, G. Iaccarino, "Quantifying Inflow and RANS Turbulence Model-form Uncertainties for Wind Engineering Flows", *Journal Wind Engineering and Industrial Aerodynamics*, Vol. 144, pp. 202-212, 2015.
33. Abgrall, P.M. Congedo, G. Geraci, G. Iaccarino, "An Adaptive Multiresolution Semi-Intrusive Scheme for UQ in Compressible Fluid Problems", *International Journal Numerical Methods in Fluids*, Vol. 78 (10), pp. 595-637, 2015.
34. S. Ghili, G. Iaccarino, "Reusing Chebyshev points for polynomial interpolation", *Numerical Algorithms*, Vol. 35, pp. 1017-1036, 2014.
35. G. Tang, G. Iaccarino, "Subsampled Gauss Quadrature Nodes for Estimating Polynomial Chaos Expansions", *SIAM Journal of Uncertainty Quantification*, Vol. 2(1), pp.423-443, 2014
36. O. Marxen G. Iaccarino, TE Magin, "Direct Numerical Simulations of Hypersonic Boundary Layer Transition with finite Rate Chemistry", *Journal of Fluid Mechanics*, Vol. 755, pp. 122,134, 2014
37. S. Ryu, G. Iaccarino, "A Subgrid Scale Model based on the Volumetric Strain Stretching", *Physics of Fluids*, Vol. 26(6), pp. 065107, 2014
38. C. Gorle, J. Larsson, M. Emory, G. Iaccarino, "The Deviation from Parallel Shear Flow as an Indicator of Linear Eddy-Viscosity Model Inaccuracy", *Physics of Fluids*, Vol. 26(5), pp. 051702, 2014
39. D. Schiavazzi, F. Coletti, G. Iaccarino, J. Eaton, "A Matching Pursuit Approach to Solenoidal Filtering of Three-Dimensional Velocity Measurements", *Journal of Computational Physics*, Vol. 263, pp. 206-221, 2014
40. S. Chang, G. Iaccarino, F. Ham, C. Elkins, S. Monismith, "Local Shear and Mass Transfer on Individual Coral Colonies: Computations in Unidirectional and Wave Driven Flows", *Journal of Geophysical Research: Oceans*, Vol. 119 (4), pp. 2599-2614, 2014
41. J. P. Johnson, G. Iaccarino, K.H. Chen, B. Khalighi, "Simulations of High Reynolds Number Air Flow Over the NACA-0012 Airfoil Using the Immersed Boundary Method", *Journal of Fluids Engineering*, Vol. 136(4), pp. 040901, 2014
42. J. Urzay, N. Kseib, D.F. Davidson, G. Iaccarino, R.K. Hanson, "Uncertainty-quantification analysis of the effects of residual impurities on hydrogen-oxygen ignition in shock tubes", *Combustion and Flame*, Vol. 161(1), pp. 1-15, 2014
43. P. Pettersson, G. Iaccarino, J. Nordstrom, "A stochastic Galerkin method for the Euler equations with Roe variable transformation", *Journal of Computational Physics*, Vol. 257, pp. 481-500, 2014
44. M. E. Mueller, G. Iaccarino, H. Pitsch, "Chemical kinetic uncertainty quantification for large eddy simulation of turbulent non premixed combustion", *Proc. of the Combustion Institute* Vol. 34 (1), pp. 1299-1306, 2013
45. A. Doostan, A. A. Validi, G. Iaccarino, "Non-intrusive low-rank separated approximation of high-dimensional stochastic models", *Computer Methods in Applied Mechanics and Engineering*, Vol. 263, pp. 42-55, 2013
46. P. Pettersson, G. Iaccarino, J. Nordstrom, "An intrusive hybrid method for discontinuous two-phase flow under uncertainty", *Computers & Fluids*, Vol. 86, pp. 228-239, 2013
47. D. Schiavazzi, A. Doostan, G. Iaccarino, "Sparse multiresolution stochastic approximation for uncertainty quantification", *Recent Advances in Scientific Computing and Applications*, Vol. 586, pp. 295, 2013
48. J. A. S. Witteveen, G. Iaccarino, "Simplex stochastic collocation with ENO-type stencil selection for robust uncertainty quantification", *Journal of Computational Physics*, Vol. 239, pp. 2, 2013
49. G. Iaccarino, D. Sharp, J. Glimm, "Quantification of margins and uncertainties using multiple gates and conditional probabilities", *Reliability Engineering & System Safety*, Vol. 114, pp. 99-113, 2013

50. R. Pecnik, J.A.S Witteveen, G. Iaccarino, "Assessment of uncertainties in modeling of laminar to turbulent transition for transonic flows", *Flow, turbulence and combustion*, Vol. 91(1), pp. 41-61, 2013
51. S. Padhy, E.S.G. Shaqfeh, G. Iaccarino, J. F. Morris, N. Tonmukayakul, "Simulations of a sphere sedimenting in a viscoelastic fluid with cross shear flow", *Journal of Non-Newtonian Fluid Mechanics*, Vol. 197, pp. 48-60, 2013
52. D.A. Philips, R. Rossi, G. Iaccarino, "Large-eddy simulation of passive scalar dispersion in an urban-like canopy", *Journal of Fluid Mechanics*, Vol. 723, pp. 404-428, 2013
53. P. M. Congedo, J. A. S. Witteveen, G. Iaccarino, "A simplex-based numerical framework for simple and efficient robust design optimization", *Computational Optimization*, Vol. 56(1), pp. 231-253, 2013
54. R. Rossi, G. Iaccarino, "Numerical analysis and modeling of plume meandering in passive scalar dispersion downstream of a wall-mounted cube", *International journal of heat and fluid flow*, Vol. 43, pp. 137-148, 2013
55. C. Gorle, G. Iaccarino, "A framework for epistemic uncertainty quantification of turbulent scalar flux models for Reynolds-averaged Navier-Stokes simulations", *Physics of Fluids*, Vol. 25(5), pp. 55105, 2013
56. J.A.S. Witteveen, G. Iaccarino, "Subcell resolution in simplex stochastic collocation for spatial discontinuities", *Journal of Computational Physics*, Vol. 251, pp. 17-52, 2013
57. O. Marxen, T. E. Magin, E.S.G. Shaqfeh, G. Iaccarino, "A method for the direct numerical simulation of hypersonic boundary-layer instability with finite-rate chemistry", *Journal Computational Physics* Vol. 255, pp. 572-589, 2013
58. S. Padhy, M. Rodriguez, E.S.G. Shaqfeh, G. Iaccarino, J.F. Morris, N. Tonmukayakul, "The effect of shear thinning and walls on the sedimentation of a sphere in an elastic fluid under orthogonal shear", *Journal of Non-Newtonian Fluid Mechanics*, Vol. 201, pp. 120-129, 2013
59. G. Petrone, J. Axerio-Cilies, D. Quagliarella, G. Iaccarino, "A probabilistic non-dominated sorting GA for optimization under uncertainty", *Engineering Computations*, Vol. 30(8), pp. 1054-1085, 2013
60. M. Emory, J. Larsson, G. Iaccarino, "Modeling of structural uncertainties in Reynolds-averaged Navier-Stokes closures", *Physics of Fluids*, Vol. 25(11), pp. 110822, 2013
61. R. Pecnik, V. Terrapon, and G. Iaccarino, "Reynolds-Averaged Navier-Stokes Simulations of the Hyshot II Scramjet," *AIAA Journal*, Vol. 50, No. 8, pp. 1717-1732, 2012.
62. J.A.S. Witteveen and G. Iaccarino, "Refinement Criteria for Simplex Stochastic Collocation with Local Extremum Diminishing Robustness," *SIAM Journal on Scientific Computing*, Vol. 34, 2012, pp. A1522-A1543, 2012.
63. J. Axerio and G. Iaccarino, "Numerical Simulations of a Stationary Tire Wake," *Journal of Fluids Engineering*, Vol. 134, pp. 021221, 2012.
64. Q. Wang, K. Duraisamy, J.J. Alonso, and G. Iaccarino, "Risk Assessment of Scramjet Unstart Using Adjoint-Based Sampling Methods," *AIAA Journal*, Vol. 50, No. 3, pp. 581-592, 2012.
65. J. Witteveen and G. Iaccarino, "Simplex Stochastic Collocation with Random Sampling and Extrapolation," *SIAM Journal of Scientific Computing*, Vol. 34, pp. A814-A838, 2012.
66. P. Congedo, P. Colonna, and G. Iaccarino, "Backward Uncertainty Propagation in flow problems: prediction of rarefaction shock waves," *Computer Methods in Engineering*, Vol. 213-216, pp. 314-326, 2012.
67. T. Chantrasmee and G. Iaccarino, "Forward and Backward Uncertainty Propagation using the Pade-Legendre Method," *International Journal of Uncertainty Quantification*, Vol. 2, No. 2, pp. 123-145, 2011.
68. D. Philips, R. Rossi, and G. Iaccarino, "The influence of normal stress anisotropy in predicting scalar dispersion with the v2f model," *International Journal of Heat and Fluid Flow*, Vol. 32, No. 5, pp. 943-963, 2011.
69. P. Constantine, D. Gleich, and G. Iaccarino, "A Factorization of the Spectral Galerkin System for Parameterized Matrix Equations," *SIAM J. of Scientific Computing*, Vol 33, No. 5 pp. 2995-3009, 2011.
70. D. Richter, E.S.G. Shaqfeh, and G. Iaccarino, "Floquet stability analysis of viscoelastic flow over a cylinder," *Journal of Non-Newtonian Fluid Mechanics*, Vol. 166, No. 11, pp.554-565, 2011.
71. O. Marxen, T. Magin, G. Iaccarino, and E.S.G. Shaqfeh, "A high-order numerical method to study hypersonic boundary-layer instability" *Physics of Fluids*, Vol. 23, No. 8, pp. 84108-84133, 2011.
72. D. Richter, G. Iaccarino, and E.S.G. Shaqfeh, "Numerical Simulation of Polymer Injection in Turbulent Flow Past a Circular Cylinder," *Journal of Fluids Engineering*, Vol. 133, No. 10, pp. 104501-104505, 2011.
73. G. Iaccarino, R. Pecnik, J. Glimm, and D. Sharp, "A QMU approach for characterizing the operability limits of air-breathing hypersonic vehicles," *Reliability Engineering and System Safety* Vol. 96(9), pp. 1150-1160, 2010.
74. D. Rossi, D. Philips, G., Iaccarino, "A numerical study of scalar dispersion downstream of a wall-mounted cube," *International Journal of Heat and Fluid Flow*, Vol. 31, pp. 805-819, 2010.
75. P. Constantine, D. Gleich, and G. Iaccarino, "Spectral Methods for Parametrized Matrix Equations," *SIAM Journal on Matrix Analysis and Applications (SIMAX)*, Vol. 31(5), 2681-2699, 2010.

76. Q. Wang, P. Moin, and G. Iaccarino, "A Rational Interpolation Scheme with Superpolynomial Rate of Convergence," *SIAM Journal of Numerical Analysis*, Vol. 47 No. 6, pp. 4073-4097, 2010.
77. G. Iaccarino, E.S.G. Shaqfeh, and Y. Dubief, "Reynolds-averaged Modeling of Polymer Drag Reduction in Turbulent Flows," *Journal of Non-Newtonian Fluid Mechanics* Vol. 165, pp. 376-384, 2010.
78. D. Richter, G. Iaccarino, and E.S.G. Shaqfeh, "Simulations of Three-dimensional Viscoelastic Flows Past a Circular Cylinder at Moderate Reynolds Numbers," *Journal of Fluid Mechanics*, Vol. 651, pp. 415-442, 2010.
79. O. Marxen, G. Iaccarino, and E.S.G. Shaqfeh, "Disturbance Evolution in a Mach 4.8 Boundary Layer with Two-dimensional Roughness-induced Separation," *Journal of Fluid Mechanics*, Vol. 648, pp. 435-469, 2010.
80. Shashank, J. Larsson, G. Iaccarino, "A Colocated Incompressible Navier-Stokes Solver with Exact Mass, Momentum and Kinetic Energy Conservation in the Inviscid Limit," *J. of Computational Physics*, Vol. 229, pp. 4425-4430, 2010.
81. Q. Wang, P. Moin, G. Iaccarino, "A High-order Multivariate Interpolation for Scattered Data-set," *Journal of Computational Physics*, Vol. 229, pp. 6343-6361, 2010.
82. P. Pettersson, J. Nordstrom, G. Iaccarino, "Time-Dependent Boundary Procedures for the Burgers Equations under Uncertainty," *Acta Mathematica Scientia*, Vol. 30B, No. 2, pp. 539-550, 2010.
83. T. Chantrasm, A. Doostan, and G. Iaccarino, "Pade-Legendre Approximant for Uncertainty Quantification with Discontinuous Responses," *Journal of Computational Physics*, Vol. 228, No. 19, pp. 7159-7180, 2009.
84. P. Pettersson, G. Iaccarino, and J. Nordstrom, "Numerical Analysis of the Burgers Equation in the Presence of Uncertainty," *Journal of Computational Physics*, Vol. 228, pp. 8394-8412, 2009.
85. S. Kang, G. Iaccarino, and F. Ham, "DNS of Buoyancy-dominated Turbulent Flows on a Bluff Body Using the Immersed Boundary Method," *Journal of Computational Physics*, Vol. 228, pp. 3189-3208, 2009.
86. P. Constantine, A. Doostan, and G. Iaccarino, "A Hybrid Collocation/Galerkin Scheme for Convective Heat Transfer Problems," *International Journal Numerical Methods in Engineering*, Vol. 80, pp. 868-880, 2009.
87. S. Kang, G. Iaccarino, F. Ham, and P. Moin, "Prediction of Wall-Pressure Fluctuation in Turbulent Flows with an Immersed Boundary Method," *Journal of Computational Physics*, Vol. 228, No. 18, pp. 6753-6772, 2009.
88. Q. Wang, P. Moin, and G. Iaccarino, "Minimal Repetition Dynamic Checkpointing Algorithm for Unsteady Adjoint Calculation," *SIAM Journal of Scientific Computing*, Vol. 31, No. 4, pp. 2549-2567, 2009.
89. S. Kang, G. Iaccarino, and P. Moin, "Accurate Immersed-Boundary Reconstructions for Viscous Flow Simulations," *AIAA Journal*, Vol. 47, No. 7, pp. 1750-1760, 2009.
90. A. Doostan and G. Iaccarino, "A Least-Squares Approximation of Partial Differential Equations with High Dimensional Random Inputs," *Journal of Computational Physics*, Vol. 228, No. 12, pp. 4332-4345, 2009.
91. X.Y. Hu, N.A. Adams, and G. Iaccarino, "On the HLLC Riemann Solver for Interface Interaction in Compressible Multi-fluid Flow," *Journal of Computational Physics*, Vol. 228, No. 17, pp. 6572-6589, 2009.
92. R. Rossi and G. Iaccarino, "Numerical Simulation of Scalar Dispersion Downstream of a Square Obstacle using Gradient-Transport Type Models," *Atmospheric Environment*, Vol. 43, No. 16, pp. 2518-2531, 2009.
93. J. Nordstrom, F. Ham, M. Shoeybi, E. van der Weide, M. Svard, K. Mattsson, G. Iaccarino, and J. Gong, "A Hybrid Method for Unsteady Fluid Flow," *Computer and Fluids*, Vol. 38, No. 4, pp. 875-882, 2009.
94. K. Mattsson, F. Ham, and G. Iaccarino, "Stable Boundary Treatment for the Wave Equation on Second-Order Form," *Journal Scientific Computing*, Vol. 41, No. 3, pp. 366-383, 2009.
95. M. Wang, S. Moreau, G. Iaccarino, and M. Rogers, "LES Prediction of Wall-Pressure Fluctuations and Noise of a Low-speed Airfoil," *International Journal of Aeroacoustics*, Vol. 8, No. 3, pp. 177-198, 2009.
96. K. Mattsson, F. Ham, and G. Iaccarino, "Stable and Accurate Wave-Propagation in Discontinuous Media," *Journal of Computational Physics*, Vol. 227, No. 19, pp. 8753-8767, 2008.
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