Stefano Discetti

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Current position

2021-present	Director of the Aerospace Engineering Research Group, *Universidad Carlos III de Madrid*
2018-present	Associate Professor (Profesor Titular), *Universidad Carlos III de Madrid Bioengineering and Aerospace Engineering Department*

Education

2010-2013	**PhD** in Aerospace and Naval Engineering Università degli Studi di Napoli Federico II **Thesis:** *Tomographic Particle Image Velocimetry – Developments and applications to turbulent flows*
2007-2009	**MSc** in Aerospace Engineering (*with honors*) Università degli Studi di Napoli Federico II **Thesis:** *Advanced algorithms for PIV analysis*
2004-2007	**BSc** in Aerospace Engineering (*with honors*) Università degli Studi di Napoli Federico II **Thesis:** *Temperature measurements with IR thermography in the plasma wind tunnel Scirocco (CIRA)*

Former professional experience

2013-2018	Visiting Professor at Universidad Carlos III de Madrid – Bioengineering and Aerospace Engineering Department
2013	Post-doctoral research fellow at Università degli Studi di Napoli Federico II - Industrial Engineering Department (Aerospace Section)
2010-2013	PhD student at University of Naples "Federico II"- Aerospace Engineering Department
2012	Research Assistant at Arizona State University – School for Engineering of Matter, Transport and Energy
2010	Guest Researcher at Arizona State University – School for Engineering of Matter, Transport and Energy
2007	Internship at CIRA (Italian Centre for Aerospace Research) Supervisor: Dr. A. Del Vecchio. Investigation topic: 3D Temperature measurements with IR thermography in hypersonic wind tunnel

Research projects

- NEXTFLOW. Next-generation flow diagnostics for Control. Starting Grant of the European Research Council, Grant n. 949085. P.I. **Stefano Discetti**. Grant period: 01/2021-12/2025 (1,5M €)
- AEROMATIC. Control activo de flujos aerodinámicos con aprendizaje automático. Funded by Fundación BBVA, Beca Leonardo para Innovadores y Creadores Culturales. Grant n. IN[20]_ING_ING_0163. P.I. **Stefano Discetti**. Grant period: 11/2020-04/2022. (40k €)

- ARTURO. Control Activo de la turbulencia para propulsión aeronáutica sostenible. Funded by Spanish State Research Agency. Grant n. PID2019-109717RB-I00. P.I. **Stefano Discetti** & Andrea Ianiro. Grant period: 06/2020 – 05/2023. (117,5k €)
- PITUFLOW. Pattern Identification in Turbulence for Flow control. Funded by CAM Consejería de Educación e Investigación. P.I. Andrea Ianiro & Vanesa Guerrero Lozano. Grant period: 01/2020 – 03/2022. (60k €)
- *TOOLS*. Funded by AIRBUS Operations, S.L. P.I. **Stefano Discetti** & Andrea Ianiro. Grant period: 10/2017-12/2019. (122,7k €)
- *LargeView, Very-large-scale motions measurement in pipe flows at high Reynolds numbers*. Funded by EuHIT. Grant period: 01/2017. P.I. **Stefano Discetti** (6,5k€)
- *HIDRA, High-Dynamic-Range Measurements in Pipe Flows at High Reynolds Numbers*. Funded by EuHIT. Grant period: 03/2017. P.I. Andrea Ianiro
- *CONTRAST: Transferencia de calor por convección y estructuras coherentes en capas límites turbulentas*. Funded by Spanish Ministry of Economy and Competitiveness. Grant n. DPI2016-79401-R. Grant period: 12/2016-12/2019. P.I. **Stefano Discetti** & Andrea Ianiro (99,8k€)
- *E!-DEGASS-EUR-20150008 -Desarrollo de sistemas embarcados de generacion de gas inerte para aviones de tamaño medio y medio recorrido*. Funded by CESA S.A. P.I. Pablo Fajardo. Grant period: 09/2016 – 03/2017 (35k€)
- *COTURB: Coherent Structures in Wall-bounded Turbulence*. Funded by Advanced Grant of the European Research Council. Grant period: 01/02/2016-31/01/2021. P.I. Javier Jimenez (276k €)
- *PIV study of a flapping airfoil with an actuated Trailing Edge Flap*. Funded by TU Delft. Grant period: 05/2016-09/2016. P.I. **Stefano Discetti** & Andrea Ianiro
- *Experiments over a flapping airfoil with an actuated Trailing Edge Flap*. Funded by TU Delft. Grant period: 09/2015-02/2016. P.I. Andrea Ianiro
- *Video recording during aerial refuelling hose guillotine rig tests*. Funded by Airbus Defense and Space. Grant period: 16/11/2015-31/12/2015. P.I. Pablo Fajardo
- *Realización de ensayos en arrays de paneles solares en túnel de viento*. Funded by ATOS SPAIN, S.A.U. Grant period: 06/2014-08/2014. P.I. Pablo Fajardo
- *Sistema de medida simultánea de flujos 3D y de transferencia de calor en pared en un túnel hidrodinámico*. Funded by Spanish Ministry of Economy and Competitiveness. Grant n. grant UNC313-4E-2231. Grant period: 01/2013-12/2015. P.I. Javier Rodriguez (280k€)
- *Unsteady aerodynamics of flapping wings* Funded by Spanish Ministry of Economy and Competitiveness. Grant n. TRA2013-41103. Grant period: 01/2014-12/2016. P.I. Manuel Garcia-Villalba, Oscar Flores
- *Tomographic PIV for multiplane measurements in Richtmyer-Meshkov flows at the LANL shock tube facility*. Funded by DOE/LANL, Contract No. 79419-001-09. P.I: Ronald J. Adrian.
- *Advanced Flow Diagnostics for Aeronautical Research (AFDAR)*. Funded by the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement No.265695 (www.afdar.eu). P.I: Fulvio Scarano

PhD Students advising

Gioacchino Cafiero
Universitá degli Studi di Napoli Federico II (co-supervised with Prof. T. Astarita)
Three-dimensional organization and heat transfer of jets with fractal generated turbulence
Defended on 30th May 2016

Marco Raiola
Universidad Carlos III de Madrid (co-supervised with Prof. A. Ianiro)
Empirical eigenfunctions: applications in unsteady aerodynamics
Defended on 20th December 2017

Carlos Sanmiguel Vila
Universidad Carlos III de Madrid (co-supervised with Prof. A. Ianiro)
Turbulent boundary layers with adverse pressure gradients
Defended on 29th April 2019
Awarded with Outstanding thesis award UC3M

Alejandro Güemes Jimenez
Universidad Carlos III de Madrid (co-supervised with Prof. A. Ianiro)
Sensing coherent structures from the wall
Defended on 27th July 2021

Rodrigo Castellanos García de Blas
Universidad Carlos III de Madrid (co-supervised with Prof. A. Ianiro)
Convective heat transfer control in turbulent boundary layers
Expected graduation in 2022

Firoozeh Foroozan
Universidad Carlos III de Madrid (co-supervised with Prof. A. Ianiro)
Detecting coherent structures in wall-bounded turbulent flows
Expected graduation in 2022

Iacopo Tirelli
Universidad Carlos III de Madrid (co-supervised with Prof. A. Ianiro)
Data-driven enhancement of optical measurement techniques
Expected graduation in 2024

Junwei Chen
Universidad Carlos III de Madrid (co-supervised with Dr. M. Raiola)
Complete flow description from combination of incomplete measurements
Expected graduation in 2024

Teaching experience

2014-2016	Member of the academic committee of the degree in Aerospace Engineering at Universidad Carlos III de Madrid
2014-present	Lecturer in the Master in Aeronautical Engineering at Universidad Carlos III de Madrid of the class: Propulsion systems: performance and design (6 ECTS) Experimental Aerodynamics (3 ECTS) – since a.y. 2015/2016
2014-2017	Lecturer in the Master in Plasma Physics and Nuclear Fusion (Erasmus Mundus Programme: European Master of Science in Nuclear Fusion and Engineering Physics) of the class: Fluid dynamics (6 ECTS)
2013-present	Lecturer in the degree in Aerospace Engineering at Universidad Carlos III de Madrid of the classes: Aircraft Systems (3 ECTS) Turbomachinery Design (6 ECTS) – a.y. 2013/14 to 2018/19 Mechanics of Flight (6 ECTS) – a.y. 2013/14 to 2014/15 Aerospace propulsion: complement II (6 ECTS) – a.y. 2014/15
2010-present	Co-advisor of more than 30 students on B.S. and M.Sc. graduation thesis.
2010-2013	In charge of the practical lessons and member of the exam commission in the degree in Aerospace Engineering for the classes of: Gasdinamica (Gas Dynamics) - (6 ECTS) Aerodinamica Sperimentale (Experimental Aerodynamics) - (6 ECTS) in the degree in Mechanical Engineering for the classes of: Fluidodinamica (Fluid Dynamics) - (6 ECTS) in the Master in Aerospace Engineering for the classes of: Complementi di Gasdinamica (Advanced Gas Dynamics) - (9 ECTS)

Fellowships, awards and recognitions

2016	Spanish national accreditation - Profesor Titular de Universidad.
2012	Awarded by the Committee of the *11th International Conference on Quantitative InfraRed Thermography* (QIRT 2012) with the "Student Award" in recognition of the excellent contributions in the field of IR Thermography measurements
2010	Awarded with a fellowship "CampaniAerospace" (2010) to spend a period of 4 months at Arizona State University, Tempe, USA as a visiting researcher under the supervision of Prof. R. J. Adrian
2010	First classified, and awarded with scholarship, in the admission concourse for XXV PhD course in Aerospace Engineering, Universitá degli Studi di Napoli Federico II
2009	Awarded with ADISU Fellowship for MSc accomplishment
2008	Awarded with "Premio Mazzoleni", as best graduated student for the Academic Year 2006/2007 among the engineering students of the Universitá degli Studi di Napoli Federico II
2007	Awarded with ADISU Fellowship for B.S. Degree
2005	Awarded with "Premio Ingegneria", during "Galassia Gutenberg" manifestation, promoted by Sezione Editori and Sezione Ingegneria of "Unione Industriali di Napoli", as best student for the Academic Year 2004/2005 among engineering students of Universitá degli Studi di Napoli Federico II

Books

S. Discetti, A. Ianiro (Editors), (2017) Experimental Aerodynamics, Taylor and Francis CRC Press, ISBN 978-1-49-870401-4.

Conference service

Member of the scientific committee of the International Symposia on Particle Image Velocimetry PIV since 2017

Member of the scientific committee of the International Workshop on Complex Turbulent Flows (Tangier, Morocco)

Membership in Editorial boards

Member of the Editorial Board of the journal Measurement Science and Technology since January 2018

Commissions of trust

Evaluator of national projects for Ministry of Science, Innovation and University (Spain)

Evaluator of the call PRIN 2017, Ministry of Education, University and Research (Italy)

Member of the Steering Committee of the ERCOFTAC Special Interest Group SIG32 on Particle Image Velocimetry

Member of the Scientific Council of the International Centre for Heat and Mass Transfer.

Test case provider and referee in the 4th International PIV Challenge (http://www.pivchallenge.org/pivchallenge4.html)

Seminars and invited/keynote presentations:

1. Discetti S (2021) Statistical methods to enhance PIV measurements. Fundamentals and recent advances in Particle Image Velocimetry and Lagrangian Particle Tracking, von Karman Institute Lecture Series and Events, November 15-18, Bruxelles (Belgium)
2. Discetti S (2021) Tomographic Particle Image Velocimetry. Fundamentals and recent advances in Particle Image Velocimetry and Lagrangian Particle Tracking, von Karman Institute Lecture Series and Events, November 15-18, Bruxelles (Belgium)
3. Güemes A, Cortina-Fernandez J, Sanmiguel Vila C, Ianiro A, Discetti S (2020) Data-driven methods to enhance the resolution of Particle Image Velocimetry. **Keynote lecture**. 19th International Symposium on Flow Visualization, September 14-16, Shanghai (China).

4. Discetti S (2020) Mathematical Tools, Part II: Time-Frequency Analysis. **Invited lecture**. von Karman Institute Lecture Series on "Machine Learning for Fluid Mechanics: Analysis, Modeling, Control and Closures", February 25, Bruxelles (Belgium)
5. Discetti S (2021) Pushing the limits of PIV with data-driven techniques. Invited talk at Aeroseminar of the Aerodynamics group of TU DELFT. June 25, online.
6. Discetti S (2021) ERC NEXTFLOW – Next-generation flow diagnostics for control, Seminar Series on Aerospace Science and Technology. UC3M Aerospace Engineering Department. March 23, online.
7. Discetti S (2020) Estimating large-scale-motions from remote sensors. **Invited lecture**. Flow Annual Meeting 2020, 9-10 January, Stockholm (Sweden)
8. Discetti S (2019) Enhancing PIV via data-driven methods. **Plenary keynote lecture**. 13th International Symposium on Particle Image Velocimetry, July 22-24, Munich (Germany).
9. Discetti (2018) Adverse-Pressure-Gradient effects on Turbulent Boundary Layers. **Seminar**. October 29, Universidad de Malaga (Spain)
10. Discetti S (2018) Data-driven analysis of turbulent flows. **Seminar**. May 15, Universitá di Bologna (Italy).
11. Discetti S (2018) The path to 3D velocimetry data: overview and techniques for data-driven analysis. **PhD course**, March 27-29, Universitá di Napoli Federico II (Italy).
12. Discetti S (2017) Estimation of turbulent flow fields from non-time resolved data with Extended POD. **Keynote lecture**. International Workshop on Complex Turbulent Flows, November 27-28, Tangier (Morocco)
13. Discetti S (2017) Brief survey of existing 3D PIV techniques. **3D PIV course**, 12th International Symposium on Particle Image Velocimetry, June 18-22, Busan (Korea)
14. Discetti S (2017) Working principles of Tomographic PIV. **3D PIV course**, 12th International Symposium on Particle Image Velocimetry, June 18-22, Busan (Korea)
15. Discetti S, Sanmiguel Vila C, Ianiro A, Vinuesa R, Schlatter P, Örlü R (2017) Adverse-pressure-gradient turbulent boundary layers: flow organization and high-resolution statistics. **Keynote lecture**. 12th International Symposium on Particle Image Velocimetry, June 18-22, Busan (Korea)
16. Discetti S, Ianiro A (2016) An intensive and practise-oriented short-course on Particle Image Velocimetry. **PhD course**. KTH Royal Institute of Technology. February 1-5, Stockholm (Sweden)
17. Discetti S (2015) Tomographic PIV short **course**. 10th Pacific Symposium of Flow Visualization and image processing, June 19, Naples (Italy) http://www.psfvip10.unina.it/pdf/TOMOPIV_SC.pdf
18. Discetti S, Astarita T (2014) PIV Challenge: main results of test cases C and D. *4th International PIV Challenge,* July 5, Lisbon (Portugal) http://www.pivchallenge.org/pivchallenge4.html
19. Discetti S (2014) Tomographic Particle Image Velocimetry: recent developments and applications to turbulent flow measurements. **Seminar.** Aeronautic Turbulence Seminars, January 30th 2014, Imperial College London (UK), website: http://www3.imperial.ac.uk/tmfc/seminars

Peer-reviewed publications:

1. Chen J, Raiola M, Discetti S (2022) Pressure from data-driven estimation of velocity fields using snapshot PIV and fast probes. Experimental Thermal and Fluid Science, 110647. https://doi.org/10.1016/j.expthermflusci.2022.110647
2. Castellanos R, Cornejo Maceda GY, de la Fuente I, Noack BR, Ianiro A, Discetti, S. (2022) Machine-learning flow control with few sensor feedback and measurement noise. Physics of Fluids, 34(4), 047118. https://doi.org/10.1063/5.0087208
3. Zheng X, Bellani G, Mascotelli L, Örlü R, Ianiro A, Sanmiguel Vila C, Discetti S, Serpieri J, Raiola M, Talamelli A, Li Y, Jiang N (2022) Inter-scale interaction in pipe flows at high Reynolds numbers. Experimental Thermal and Fluid Science, 131, 110529. https://doi.org/10.1016/j.expthermflusci.2021.110529
4. Castellanos R, Michelis T, Discetti S, Ianiro A, Kotsonis M (2022) Reducing turbulent convective heat transfer with streamwise plasma vortex generators. Experimental Thermal and Fluid Science, 110596. https://doi.org/10.1016/j.expthermflusci.2022.110596
5. Foroozan F, Guerrero V, Ianiro A, Discetti S (2021) Unsupervised modelling of a transitional boundary layer. Journal of Fluid Mechanics, 929, A3. https://doi.org/10.1017/jfm.2021.829

6. Guastoni L, Güemes A, Ianiro A, Discetti S, Schlatter P, Azizpour H, Vinuesa R (2021) Convolutional-network models to predict wall-bounded turbulence from wall quantities. Journal of Fluid Mechanics, 928, A27. https://doi.org/10.1017/jfm.2021.812
7. Iakovidis D K et al (2021) Roadmap on signal processing for next generation measurement systems. Measurement Science and Technology, 33(1), 012002. https://doi.org/10.1088/1361-6501/ac2dbd
8. Raiola M, Discetti S, Ianiro A (2021) Data-driven identification of unsteady-aerodynamics phenomena in flapping airfoils. Experimental Thermal and Fluid Science, 124, 110234. Doi: https://doi.org/10.1016/j.expthermflusci.2020.110234
9. Castellanos R, Sanmiguel Vila C, Güemes A, Discetti S (2021). On the uncertainty of boundary-layer parameters from Ensemble PTV data. Measurement Science and Technology. Doi: https://doi.org/10.1088/1361-6501/abfad0
10. Cortina-Fernández J, Sanmiguel Vila C, Ianiro A, Discetti S (2021) From sparse data to high-resolution fields: ensemble particle modes as a basis for high-resolution flow characterization. Experimental Thermal and Fluid Science, 120, 110178. Doi: https://doi.org/10.1016/j.expthermflusci.2020.110178
11. Sanmiguel Vila C, Vinuesa R, Discetti S, Ianiro A, Schlatter P, Örlü R (2020) Separating adverse-pressure-gradient and Reynolds-number effects in turbulent boundary layers. Physical Review Fluids, 5(6), 064609. Doi: https://doi.org/10.1103/PhysRevFluids.5.064609
12. Raiola, M., Lopez-Nuñez, E., Cafiero, G., & Discetti, S. (2020). Adaptive ensemble PTV. Measurement Science and Technology, 31(8), 085301. Doi: https://doi.org/10.1088/1361-6501/ab82bf
13. Güemes A, Discetti S, Ianiro A (2020) Sensing the turbulent large-scale motions with their wall signature. Physics of Fluids, 31, 125112. Doi: https://doi.org/10.1063/1.5128053
14. Sanmiguel Vila C, Vinuesa R, Discetti S, Ianiro A, Schlatter P, Örlü R (2020) Experimental realisation of near-equilibrium adverse-pressure-gradient turbulent boundary layers. Experimental Thermal and Fluid Science, 112, 109975. doi: https://doi.org/10.1016/j.expthermflusci.2019.109975
15. Güemes A, Sanmiguel Vila C, Örlü R, Vinuesa R, Schlatter P, Ianiro A, Discetti S (2019). Flow organization in the wake of a rib in a turbulent boundary layer with pressure gradient. Experimental Thermal and Fluid Science, 108, 115-124. doi: https://doi.org/10.1016/j.expthermflusci.2019.05.022
16. Moriche M, Raiola M, Discetti S, Ianiro A, Flores O, García-Villalba M (2019). Assessing aerodynamic force estimation with experiments and simulations of flapping-airfoil flows on the verge of three-dimensionality. Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, 0954410019867570. doi: https://doi.org/10.1177/0954410019867570
17. Mallor F, Raiola M, Sanmiguel Vila C, Örlü R, Discetti S, Ianiro A (2019) Modal decomposition of flow fields and convective heat transfer maps: An application to wall-proximity square ribs. Experimental Thermal and Fluid Science, 102, 517-527, doi: https://doi.org/10.1016/j.expthermflusci.2018.12.023
18. Discetti S, Bellani G, Örlü R, Serpieri J, Sanmiguel Vila C, Raiola M, Zheng X, Mascotelli L, Talamelli A, Ianiro A (2019). Characterization of very-large-scale motions in high-Re pipe flows. Experimental Thermal and Fluid Science, 104, 1-8, doi: https://doi.org/10.1016/j.expthermflusci.2019.02.001
19. Torre AFM, Ianiro A, Discetti S, Carlomagno GM (2018). Evaluation of anisotropic tangential conduction in printed-circuit-board heated-thin-foil heat flux sensors. International Journal of Heat and Mass Transfer, 127, 1138-1146, doi: https://doi.org/10.1016/j.ijheatmasstransfer.2018.06.106
20. Discetti S, Coletti F (2018). Volumetric velocimetry for fluid flows. Measurement Science and Technology, 29, 042001, doi: https://doi.org/10.1088/1361-6501/aaa571
21. Discetti S, Raiola M, Ianiro A (2018) Estimation of time-resolved turbulent fields through correlation of non-time-resolved field measurements and time-resolved point measurements, Experimental Thermal and Fluid Science, 93, 119-130, doi: https://doi.org/10.1016/j.expthermflusci.2017.12.011
22. Mallor F, Sanmiguel Vila C, Ianiro A, Discetti S (2018). Wall-mounted perforated cubes in a boundary layer: Local heat transfer enhancement and control. International Journal of Heat and Mass Transfer, 117, 498-507. doi: https://doi.org/10.1016/j.ijheatmasstransfer.2017.10.027
23. Raiola, M., Discetti, S., Ianiro, A., Samara, F., Avallone, F., & Ragni, D. (2017). Smart Rotors: Dynamic-Stall Load Control by Means of an Actuated Flap. AIAA Journal, 56, 1388-1401, doi: https://doi.org/10.2514/1.J056342
24. Sanmiguel Vila C, Örlü R, Vinuesa R, Schlatter P, Ianiro A, Discetti S (2017) Adverse-pressure-gradient effects on turbulent boundary layers: statistics and flow-field organization, Flow, turbulence and combustion, 99, 589-612, doi: https://doi.org/10.1007/s10494-017-9869-z

25. Vinuesa R, Örlü R, Sanmiguel Vila C, Ianiro A, Discetti S, Schlatter P (2017) Revisiting history effects in adverse-pressure-gradient turbulent boundary layers, Flow, turbulence and combustion, 99, 565-587, doi: https://doi.org/10.1007/s10494-017-9845-7
26. Sanmiguel Vila C, Vinuesa R, Discetti S, Ianiro A, Schlatter P, Örlü R (2017) On the identification of well-behaved turbulent boundary layers. Journal of Fluid Mechanics, 822, 109-138. doi: https://doi.org/10.1017/jfm.2017.258
27. Raiola M, Greco CS, Contino M, Discetti S, Ianiro A (2017) Towards enabling time-resolved measurements of turbulent convective heat transfer maps with IR thermography and a heated thin foil. International Journal of Heat and Mass Transfer, 108 (A), 199-209. doi:10.1016/j.ijheatmasstransfer.2016.12.002
28. Mendez MA, Raiola M, Masullo A, Discetti S, Ianiro A, Theunissen R, Buchlin JM (2017). POD-based background removal for particle image velocimetry. Experimental Thermal and Fluid Science, 80, 181-192. doi:10.1016/j.expthermflusci.2016.08.021
29. Agüera N, Cafiero G, Astarita T, Discetti S (2016). Ensemble 3D PTV for high resolution turbulent statistics. Measurement Science and Technology, 27(12), 124011. doi:10.1088/0957-0233/27/12/124011
30. Castrillo, G., Cafiero, G., Discetti, S., & Astarita, T. (2016). Blob-enhanced reconstruction technique. Measurement Science and Technology, 27(9), 094011. doi:10.1088/0957-0233/27/9/094011
31. Sanmiguel Vila C, Discetti S, Carlomagno GM, Astarita T, Ianiro A (2016). On the onset of horizontal convection. International Journal of Thermal Sciences, 110, 96-108. doi:10.1016/j.ijthermalsci.2016.06.019
32. Cafiero G, Greco CS, Astarita T, Discetti S (2016). Flow field features of fractal impinging jets at short nozzle to plate distances. Experimental Thermal and Fluid Science, 78, 334-344. doi:10.1016/j.expthermflusci.2016.06.009
33. Raiola M, Ianiro A, Discetti S (2016). Wake of tandem cylinders near a wall. Experimental Thermal and Fluid Science, 78, 354-369. doi:10.1016/j.expthermflusci.2016.06.003
34. Kähler CJ, Astarita T, Vlachos PP, Sakakibara J, Hain R, Discetti S, La Foy R, Cierpka C (2016). Main results of the 4th International PIV Challenge. Experiments in Fluids, 57(6), 1-71. doi: 10.1007/s00348-016-2173-1
35. Cafiero G, Discetti S, Astarita T (2015). Flow field topology of submerged jets with fractal generated turbulence. Physics of Fluids (1994-present), 27(11), 115103. doi:10.1063/1.4935185
36. Raiola M, Discetti S, Ianiro A (2015) On PIV random error minimization with optimal POD-based low order reconstruction. Experiments in Fluids 56:75 doi:10.1007/s00348-015-1940-8, ISSN 0723-4864.
37. Avallone F, Discetti S, Astarita T, Cardone G (2015) Convergence enhancement of single-pixel PIV with symmetric double correlation. Experiments in Fluids 56:71 doi: 10.1007/s00348-015-1938-2 , ISSN 0723-4864.
38. Cafiero G, Discetti S, Astarita T (2014) Heat transfer enhancement of impinging jets with fractal-generated turbulence. International Journal of Heat and Mass Transfer 75:173-183 doi:10.1016/j.ijheatmasstransfer.2014.03.049, ISSN 0017-9310.
39. Discetti S, Astarita T (2014) On the detrimental effect of increasing the number of cameras on self-calibration for Tomographic PIV. Measurement Science and Technology. 25:084001 doi:10.1088/0957-0233/25/8/084001, ISSN 0957-0233.
40. Cafiero G, Ceglia G, Discetti S, Ianiro A, Astarita T, Cardone G (2014) On the three-dimensional precessing jet flow past a sudden expansion. Experiments in Fluids 55:1677 doi:10.1007/s00348-014-1677-9, ISSN 0723-4864.
41. Ceglia G, Discetti S, Ianiro A, Michaelis D, Astarita T, Cardone G (2014) Three-dimensional organization of the flow structure in a non-reactive model aero engine lean burn injection system. Experimental Thermal and Fluid Science 52:164-173 doi:10.1016/j.expthermflusci.2013.09.007, ISSN 0894-1777.
42. Discetti S, Ziskin IB, Astarita T, Adrian RJ, Prestridge K (2013) PIV measurements of anisotropy and inhomogeneity in decaying fractal generated turbulence. Fluid Dynamics Research 45:061401 doi:10.1088/0169-5983/45/6/061401, ISSN 1873-7005.
43. Discetti S, Ianiro A, Astarita T, Cardone G (2013) On a novel low-cost high accuracy experimental setup for tomographic particle image velocimetry. Measurement Science and Technology 24:075302 doi:10.1088/0957-0233/24/7/075302, ISSN 0957-0233.

44. Discetti S, Natale A, Astarita T (2013) Spatial Filtering Improved Tomographic PIV. Experiments in Fluids 54(4):1505-1517, doi:10.1007/s00348-013-1505-7, ISSN 0723-4864.
45. Discetti S, Adrian RJ (2012) High accuracy measurement of magnification for monocular PIV. Measurement Science and Technology 23:117001 doi:10.1088/0957-0233/23/11/117001, ISSN 0957-0233.
46. Discetti S, Astarita T (2012) Fast 3D PIV with direct sparse cross-correlations. Experiments in Fluids 53(5):1437-1451, doi:10.1007/s00348-012-1370-9, ISSN 0723-4864.
47. Discetti S, Astarita T (2012) A fast multi-resolution approach to tomographic PIV. Experiments in Fluids 52(3):765-777, doi:10.1007/s00348-011-1119-x, ISSN 0723-4864.
48. Carlomagno GM, Discetti S, Astarita T (2011) Experimental assessment of a new heat flux sensor for measuring convective heat transfer coefficients. QIRT Journal, vol 8:37-49, doi:10.3166/qirt.8.37-49, ISSN 1768-6733.

Contributions in conferences:

1. Castellanos R, de la Fuente I, Cornejo Maceda G, Noack BR, Ianiro A, Discetti S (2021) Machine learning flow control in the few sensor limit. APS-DFD 2021, November 21-23, Phoenix (USA) – hybrid.
2. Castellanos R, Salih G, Raiola M, Ianiro A, Discetti S (2021) Pulsed slot jets in crossflow for heat transfer enhancement. The 13th International ERCOFTAC symposium on engineering, turbulence, modelling and measurements, September 15-17, Rhodes (Greece)
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