

Curriculum vitae

PERSONAL INFORMATION Alessandro Colombo

📍 Università degli Studi di Bergamo
Dipartimento di Ingegneria e Scienze Applicate
viale Marconi, 5 – 24044 Dalmine (BG), Italy

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Scopus Author ID: 55578807312

WORK EXPERIENCE

1 Oct 2018–Present Fixed-term researcher
Università degli Studi di Bergamo
viale Marconi, 5, 24044 Dalmine (Italy)
<http://www.unibg.it>
Fixed-term researcher (B-type) in Fluid dynamics (SSD ING-IND/06) at
Dipartimento di Ingegneria e scienze applicate, Università degli Studi di Bergamo
[Ricercatore a tempo determinato (tipo B)].

1 Oct 2015–30 Sep 2018 Fixed-term researcher
Università degli Studi di Bergamo
viale Marconi, 5, 24044 Dalmine (Italy)
<http://www.unibg.it>
Fixed-term researcher (A-type) in Fluid dynamics (SSD ING-IND/06) at
Dipartimento di Ingegneria e scienze applicate, Università degli Studi di Bergamo
[Ricercatore a tempo determinato (tipo A)].
Involved in the EU Horizon 2020 project TILDA (Towards Industrial LES/DNS in
Aeronautics - Paving the Way for Future Accurate CFD)
(http://cordis.europa.eu/project/rcn/193362_en.html) grant agreement No.635962.

23 May 2016–22 Sep 2016 Research collaboration
Università degli Studi di Brescia
<http://www.unibs.it/>
“Implementation of an h -multigrid solution strategy based on agglomeration in an
incompressible solver for medical flows \ Implementazione di una strategia risolutiva di tipo
 h -multigrid basata sull'agglomerazione in un solutore incompressibile per flussi medicali”
Work done within the research activity with Medtronic (<http://www.medtronic.com>): “Study
of splanchnic perfusion as assessed by Computational Fluid Dynamics (CFD) in
thoracoabdominal aneurysms treated by hybrid procedures”.
Scientific advisor: Prof. Stefano Bonardelli.

1 Dec 2014–31 Jan 2015 Research collaboration
Università Politecnica delle Marche
via Brecce Bianche, 60131 Ancona (Italy)

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<http://www.univpm.it>

"Implementation in a Discontinuous Galerkin solver of the damping terms for the acoustic waves and results verification \ Implementazione in un codice di calcolo agli elementi finiti discontinui di Galerkin dei termini di smorzamento delle onde acustiche e successiva verifica dei risultati"

Scientific advisor: Prof. Andrea Crivellini

1 Nov 2013–31 Oct 2014

Temporary research fellowship

Università degli Studi di Bergamo
viale Marconi, 5, 24044 Dalmine (BG) (Italy)
<http://www.unibg.it>

"Development and assessment of a high-order Discontinuous Galerkin solver for underresolved turbulence in compressible and incompressible flows".
SSD ING-IND/06 - Fluid dynamics

2 Oct 2013–29 Oct 2013

Research collaboration

Università degli Studi di Bergamo
viale Marconi, 5, 24040 Dalmine (BG) (Italy)
<http://www.unibg.it>

"Implementation of the OpenFOAM platform for the simulation of two-phase ejectors \ Implementazione della piattaforma OpenFOAM per la simulazione di eiettori bifase"

Scientific Advisors: Prof. Francesco Bassi, Prof.ssa Caterina Rizzi

8 Feb 2013–15 Apr 2013

Research collaboration

Università degli Studi di Bergamo
viale Marconi, 5, 24040 Dalmine (BG) (Italy)
<http://www.unibg.it>

" Study of an ejector device \ Studio di un dispositivo eietttore"

Scientific Advisor: Prof.ssa Caterina Rizzi

1 Feb 2011–30 Sep 2013

Temporary research fellowship

Università degli Studi di Bergamo
viale Marconi, 5, 24044 Dalmine (BG) (Italy)
<http://www.unibg.it>

"Development, implementation and evaluation of advanced turbulence models for high-order discontinuous Galerkin method".

SSD ING-IND/06 - Fluid dynamics

Scientific Advisor: Prof. Francesco Bassi

Work performed within the EU IDIHOM project (Industrialisation of High-Order Methods – A Top-Down Approach) under the 7th FWP (Seventh Framework Programme).

http://www.dlr.de/as/en/desktopdefault.aspx/tabid-7027/11654_read-27492/

2 Apr 2007–31 Oct 2007

Internship period

German Aerospace Center (DLR), Member of the Helmholtz Association Institute of Aerodynamics and Flow Technology (AS), Department Numerical Methods (NV)
Lilienthalplatz, 7, D-38108 Braunschweig (Germany)
<http://www.dlr.de/as>

Development of my Master Thesis work titled: "Investigation into the Decoupling of Mean-

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flow and Turbulence-Model Relaxation for a Finite-Volume Discretization of the RANS Equations".

Supervisor: Prof. Francesco Bassi

Co-Supervisor: Dr. Richard P. Dwight

The work concerns improvements to the steady-state efficiency of the unstructured finite volume solver the DLR Tau-Code. In particular the decoupling of mean-flow and turbulence equations was investigated. An extensive analytical study precedes and supports the computational approach used in the systematic investigation of the decoupled solver. The work performed may be considered as an overview on the treatment of the turbulence model, providing a deep insight into the temporal evolution.

EDUCATION AND TRAINING

1 Jan 2008–21 Apr 2011

Ph.D.

Università degli Studi di Bergamo, Dalmine (BG) (Italy)

Ph.D. in "Technology for energy and environment technology"

Ph.D. Thesis title: "An agglomeration based discontinuous Galerkin method for compressible flows"

This work aims to deeply assess the potential of the Discontinuous Galerkin method on general meshes, polygons in 2D. The ability to deal with arbitrary elements is the key feature to simply perform a non-standard approach to the adaptive mesh refinement where agglomeration coarsening allows to locally adapt the resolution of the mesh. The mesh becomes a degree of freedom of the computation where the nodes connectivity is determined on the fly giving a great geometrical flexibility to the proposed implementation.

The work considers the Discontinuous Galerkin discretization of simple model problems as well as the compressible Navier-Stokes and RANS + $k-\omega$ turbulence model equations.

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
B2	C1	B2	B2	B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

ADDITIONAL INFORMATION

ASN qualification

National scientific qualification as associate Professor. Scientific sector 09/A1 - Aeronautical and Aerospace Engineering and Naval Architecture. SSD ING-IND/06 - Fluid Dynamics. Obtained on 07/04/2017, valid until 07/04/2023.

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PhD Thesis An agglomeration-based discontinuous Galerkin method for compressible flows.

ISBN: 978-88-97413-01-1

<http://hdl.handle.net/10446/886>

Publications A. Nigro, C. De Bartolo, A. Crivellini, M. Franciolini, A. Colombo, F. Bassi. "A low-dissipation DG method for the under-resolved simulation of low Mach number turbulent flows". *Computers & Mathematics with Applications*, vol. 77, p. 1739-1755, ISSN: 0898-1221, 2019
doi: 10.1016/j.camwa.2018.09.049

F. Bassi, F. Massa, L. Botti, A. Colombo. "Artificial compressibility Godunov fluxes for variable density incompressible flows". *Computers & Fluids*, vol. 169, p. 186-200, ISSN: 0045-7930, 2018
doi: 10.1016/j.compfluid.2017.09.010

A. Crivellini, M. Franciolini, A. Colombo, F. Bassi. "OpenMP Parallelization Strategies for a Discontinuous Galerkin Solver". *International Journal of Parallel Programming*, p. 1-36, ISSN: 0885-7458, 2018
doi: 10.1007/s10766-018-0589-3

L. Botti, A. Colombo, F. Bassi (2017). "*h*-multigrid agglomeration based solution strategies for discontinuous Galerkin discretizations of incompressible flow problems". *Journal of Computational Physics*, vol. 347, p. 382-415, ISSN: 0021-9991, 2017
doi: 10.1016/j.jcp.2017.07.002

G. Zenoni, T. Leicht, A. Colombo, L. Botti (2017). "An agglomeration-based adaptive discontinuous Galerkin method for compressible flows". *International Journal for Numerical Methods in Fluids*, vol. 85, p. 465-483, ISSN: 0271-2091, 2017
doi: 10.1002/flid.4390

F. Bassi, L. Botti, A. Colombo, A. Crivellini, N. Franchina, A. Ghidoni (2016). "Assessment of a high-order accurate Discontinuous Galerkin method for turbomachinery flows". *International Journal of Computational Fluid Dynamics*, vol. 30, p. 307-328, ISSN: 1061-8562, 2016
doi: 10.1080/10618562.2016.1198783

F. Bassi, L. Botti, A. Colombo, A. Crivellini, A. Ghidoni, F. Massa. "On the development of an implicit high-order Discontinuous Galerkin method for DNS and implicit LES of turbulent flows". *European Journal of Mechanics. B, Fluids*, vol. 55, p. 367-379, ISSN: 0997-7546, 2016
doi: 10.1016/j.euromechflu.2015.08.010

A. Colombo, A. Crivellini, "Assessment of a sponge layer non-reflecting boundary treatment for high-order CAA/CFD computations", *Computers & Fluids*, 140:1339-1351, 2016, Elsevier Science, Amsterdam (NL), 2016
doi:10.1016/j.compfluid.2016.09.019

G. Noventa, F. Massa, F. Bassi, A. Colombo, N. Franchina, A. Ghidoni, "A high-order Discontinuous Galerkin solver for unsteady incompressible turbulent flows", *Computers & Fluids*, 139:248-260, 2016, Elsevier Science, Amsterdam (NL), 2016
doi:10.1016/j.compfluid.2016.03.007

M. Lorini, F. Bassi, A. Colombo, A. Ghidoni, "High-order implementation of a non-local transition model in a DG solver for turbomachinery applications", *Computers & Fluids*, 127:115-130, 2016, Elsevier Science, Amsterdam (NL), 2016
doi:10.1016/j.compfluid.2015.12.009

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F. Bassi, L. Botti, A. Colombo, A. Crivellini, A. Ghidoni, F. Massa, "On the development of an implicit high-order Discontinuous Galerkin method for DNS and implicit LES of turbulent flows", *European Journal of Mechanics - B/Fluids*, 55, Part 2:367-379, 2016, "Vortical Structures and Wall Turbulence", Elsevier Science, Amsterdam (NL), 2016
doi:10.1016/j.euromechflu.2015.08.010

F. Bassi, L. Botti, A. Colombo, A. Ghidoni, F. Massa, "Linearly implicit Rosenbrock-type Runge-Kutta schemes applied to the Discontinuous Galerkin solution of compressible and incompressible unsteady flows", *Computers & Fluids*, 118:305-320, 2015, Elsevier Science, Amsterdam (NL), 2015
<http://dx.doi.org/10.1016/j.compfluid.2015.06.007>

A. Ghidoni, A. Colombo, F. Bassi, S. Rebay, "Efficient p -multigrid discontinuous Galerkin solver for complex viscous flows on stretched grids". *International Journal for Numerical Methods in Fluids*, 75(2):134-154, 2014
<http://onlinelibrary.wiley.com/doi/10.1002/fld.388...>

F. Bassi, L. Botti, A. Colombo, "Agglomeration based physical frame DG discretizations: An attempt to be meshfree". *Mathematical Models and Methods in Applied Sciences*, 24 (8):1495-1539, 2014
<http://www.worldscientific.com/doi/abs/10.1142/S0218202514400028>

A. Ghidoni, A. Colombo, S. Rebay, F. Bassi, "Simulation of the transitional flow in a low pressure gas turbine cascade with a high-order discontinuous Galerkin method". *Journal of Fluids Engineering, Transactions of the ASME*, 135(7):071101-071101-8, New York (US), 2013
<http://dx.doi.org/10.1115/1.4024107>

F. Bassi, L. Botti, A. Colombo, S. Rebay, "Agglomeration based discontinuous Galerkin discretization of the Euler and Navier-Stokes equations". *Computers & Fluids*, 61: 77-85, Elsevier Science, Amsterdam (NL), 2012
<http://dx.doi.org/10.1016/j.compfluid.2011.11.002>

F. Bassi, L. Botti, A. Colombo, D-A. Di Pietro, P. Tesini, "On the flexibility of agglomeration based physical space discontinuous Galerkin discretizations". *Journal of Computational Physics*, 231(1): 45-65, Elsevier Science, Amsterdam (NL), 2012
<http://dx.doi.org/10.1016/j.jcp.2011.08.018>

Book chapters and published proceedings collections

F. Bassi, F. Colombo, A., Crivellini, A., Franciolini, M., Ghidoni, A., Manzinali, G. and Noventa, G. "Under-resolved simulation of turbulent flows using a p-adaptive discontinuous Galerkin method". *Under-Resolved Simulation of Turbulent Flows Using a p-adaptive Discontinuous Galerkin Method*. In: Örlü R., Talamelli A., Peinke J., Oberlack M. (eds) *Progress in Turbulence VIII. iTi 2018. Springer Proceedings in Physics*, vol 226. Springer, Cham, 2019
doi: https://doi.org/10.1007/978-3-030-22196-6_25

F. Bassi, L. Botti, A. Colombo, A. Ghidoni, F. Massa, G. Noventa. "On the development of an implicit high-order discontinuous Galerkin solver for a hybrid RANS-LES model". In: Salvetti Maria Vittoria; Armenio Vincenzo; Fröhlich Jochen; Geurts Bernard J.; Kuerten Hans, *Direct and Large-Eddy Simulation XI. ERCOFTAC SERIES*, vol. 25, p. 75-82, Cham: Springer, ISBN: 978-3-030-04914-0, ISSN: 1382-4309, 2019
doi: 10.1007/978-3-030-04915-7_11

A. Colombo, P. Conti, M. Orlandi, F. Visconti, P. Mitra, D.P. Schmidt. "CFD simulations of a two-phase ejector for transcritical CO₂ cycles applied to supermarket refrigeration

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systems". In: Refrigeration science and technology : proceedings of the 13th IIR Gustav Lorentzen Conference, Valencia, 2018. Science et Technique du Froid, June 2018, p. 403-410, International Institute of Refrigeration, ISBN: 9782362150265, ISSN: 0151-1637, Valencia, Spain, 18 - 20 June 2018
doi: <http://dx.doi.org/10.18462/iir.gl.2018.1173>

F. Bassi, L. Botti, A. Colombo, A. Crivellini, A. Ghidoni, A. Nigro, S. Rebay, "Time Integration in the Discontinuous Galerkin Code MIGALE - Unsteady Problems", in: N. Kroll, C. Hirsch, F. Bassi, C. Johnston, K. Hillewaert (Eds.), IDIHOM: Industrialization of High-Order Methods - A Top-Down Approach, Vol. 128 of Notes on Numerical Fluid, Mechanics and Multidisciplinary Design, Springer International Publishing, Switzerland, pp. 205-230. doi:10.1007/978-3-319-12886-3_11, 2015
http://dx.doi.org/10.1007/978-3-319-12886-3_11

F. Bassi, L. Botti, A. Colombo, A. Crivellini, C. De Bartolo, N. Franchina, A. Ghidoni, S. Rebay, "Time Integration in the Discontinuous Galerkin code MIGALE - Steady Problems", in: N. Kroll, C. Hirsch, F. Bassi, C. Johnston, K. Hillewaert (Eds.), IDIHOM: Industrialization of High-Order Methods - A Top-Down Approach, Vol. 128 of Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Springer International Publishing, Switzerland, pp. 179-204. doi:10.1007/978-3-319-12886-3_10, 2015
http://dx.doi.org/10.1007/978-3-319-12886-3_10

F. Bassi, L. Botti, A. Colombo, A. Ghidoni, S. Rebay, "Implementation of an Explicit Algebraic Reynolds Stress Model in an Implicit Very High-Order Discontinuous Galerkin Solver". Spectral and High Order Methods for Partial Differential Equations - ICOSAHOM 2012, Lecture Notes in Computational Science and Engineering Volume 95, pp 111-123, Springer International Publishing, Switzerland, 2014
http://dx.doi.org/10.1007/978-3-319-01601-6_8

F. Bassi, L. Botti, A. Colombo, A. Ghidoni, S. Rebay, "Investigation of Near-Wall Grid Spacing Effect in High-Order Discontinuous Galerkin RANS Computations of Turbomachinery Flows". Spectral and High Order Methods for Partial Differential Equations - ICOSAHOM 2012, Lecture Notes in Computational Science and Engineering Volume 95, pp 125-134, Springer International Publishing, Switzerland, 2014
http://dx.doi.org/10.1007/978-3-319-01601-6_9

F. Bassi, L. Botti, A. Colombo, A. Ghidoni, S. Rebay, "Discontinuous Galerkin for turbulent flows". Adaptive High-Order Methods in Computational Fluid Dynamics, Vol. 2, World Scientific, Singapore. ISBN: 978-981-4313-18-6, 2011
<http://www.worldscientific.com/worldscibooks/10.1142/7792>

F. Bassi, L. Botti, A. Colombo, A. Crivellini, N. Franchina, A. Ghidoni, S. Rebay, "Very high-order accurate discontinuous Galerkin computation of transonic turbulent flows on aeronautical configurations". ADIGMA - A European Initiative on the Development of Adaptive Higher-Order Variational Methods for Aerospace Applications, Notes on Numerical Fluid Mechanics and Multidisciplinary Design Volume 113, pp 25-38, Springer-Verlag Berlin Heidelberg (DE), 2010
http://dx.doi.org/10.1007/978-3-642-03707-8_3

F. Bassi, A. Colombo, N. Franchina, A. Ghidoni, S. Rebay, "Robust and Efficient Implementation of Very High-Order Discontinuous Galerkin Methods in CFD". ADIGMA - A European Initiative on the Development of Adaptive Higher-Order Variational Methods for Aerospace Applications, Notes on Numerical Fluid Mechanics and Multidisciplinary Design Volume 113, pp 287-299, Springer-Verlag Berlin Heidelberg (DE), 2010
http://dx.doi.org/10.1007/978-3-642-03707-8_20

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Contributions to conferences and workshops

F. Bassi, A. Colombo, A. Crivellini, K. Fidkowski, M. Franciolini, A. Ghidoni, G. Noventa “An entropy-adjoint p -adaptive discontinuous Galerkin method for the under-resolved simulation of turbulent flows”. AIAA Aviation 2019 Forum, 17-21 June 2019, Dallas, Texas, USA
doi: <https://doi.org/10.2514/6.2019-3418>

A. Colombo, A. Crivellini, A. Ghidoni, G. Noventa, K. Fidkowski, M. Franciolini, F. Bassi. “On the development of an efficient order-adaptive DG method for the simulation of turbulent flows”. POEMs Polytopal Element Methods in Mathematics and Engineering, 29 April – 3 May 2019, CIRM – Marseille, France

F. Bassi, L. Botti, A. Colombo, A. Crivellini, M. Franciolini, A. Ghidoni G. Noventa. “A p -adaptative matrix-free discontinuous Galerkin method for the underresolved simulation of incompressible turbulent flows”. DLES12 ERCOFTAC Workshop Direct and Large Eddy Simulation 12, 5-7 June 2019, Madrid, Spain

F. Bassi, A. Colombo, A. Ghidoni, G. Noventa. “Implementation of composite RANS-ILES model in a discontinuous Galerkin solver”. DLES12 ERCOFTAC Workshop Direct and Large Eddy Simulation 12, 5-7 June 2019, Madrid, Spain

A. Colombo, A. Crivellini, A. Ghidoni, G. Noventa, K. Fidkowski, M. Franciolini, F. Bassi, L. Botti, “On the development of an efficient order-adaptive DG method for the simulation of chaotic flows”, Conference on Time Filters and Predictive Accuracy (http://www.pitt.edu/~trenchea/2019_TimeFiltersAndPredictiveAccuracy.html), University of Pittsburgh, May 29-30, 2019, Pittsburgh, USA. *Invited speaker*

F. Bassi, A. Colombo, A. Ghidoni, F. Massa, G. Noventa, “Implementation of a wall-distance-free composite RANS-LES model in a high-order implicit Discontinuous Galerkin solver”, “High-Fidelity Industrial LES/DNS Symposium – Paving the Way for Accurate CFD”, Brussels, 14-16 November 2018

F. Bassi, A. Colombo, A. Crivellini, M. Franciolini, A. Ghidoni, G. Noventa; “On the development of a p -adaptive Discontinuous Galerkin method for the accurate simulation of turbulent flows”, “High-Fidelity Industrial LES/DNS Symposium – Paving the Way for Accurate CFD”, Brussels, 14-16 November 2018

M. Franciolini, A. Crivellini, A. Colombo, L. Botti, “Numerical computation of the ERCOFTAC T3L test case suite using an implicit p -multigrid matrix-free DG solver”, “High-Fidelity Industrial LES/DNS Symposium – Paving the Way for Accurate CFD”, Brussels, 14-16 November 2018

A. Colombo, G. Manzinali, A. Ghidoni, G. Noventa, M. Franciolini, A. Crivellini, F. Bassi, “A p -adaptive implicit discontinuous Galerkin method for the under-resolved simulation of compressible turbulent flows”, ECCOMASS2018, 6th European Conference on Computational Mechanics (ECCM 6), 7th European Conference on Computational Fluid Dynamics (ECFD 7), 11-15 June 2018, Glasgow, UK

A. Colombo, D. Pesenti, A. Ghidoni, D. Pasquale, L. Botti, F. Bassi, “A discontinuous Galerkin method for real gas flow simulations”, ECCOMASS2018, 6th European Conference on Computational Mechanics (ECCM 6), 7th European Conference on Computational Fluid Dynamics (ECFD 7), 11-15 June 2018, Glasgow, UK

F. Bassi, A. Colombo, F. Massa, G. Noventa, A. Ghidoni, “Hybrid RANS-LES simulations with the discontinuous Galerkin method”, ECCOMASS2018, 6th European Conference on Computational Mechanics (ECCM 6), 7th European Conference on Computational Fluid Dynamics (ECFD 7), 11-15 June 2018, Glasgow, UK

L. Botti, A. Colombo, M. Franciolini, A. Crivellini, F. Bassi, “Multilevel solution strategies

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for discontinuous Galerkin discretizations of incompressible flow problems”, ECCOMASS2018, 6th European Conference on Computational Mechanics (ECCM 6), 7th European Conference on Computational Fluid Dynamics (ECFD 7), 11-15 June 2018, Glasgow, UK

A. Colombo, P. Conti, M. Orlandi, F. Visconti, P. Mitra, D. P. Schmidt, “CFD simulations of a two-phase ejector for transcritical CO₂ cycles applied to supermarket refrigeration systems”, GL2018, 13th IIR Gustav Lorentzen conference on natural refrigerants, 18-20 June 2018, Valencia, Spain

F. Bassi, L. Botti, A. Colombo, A. Crivellini, M. Franciolini, A. Ghidoni, G. Manzinali, F. Massa, A. Nigro, G. Noventa, S. Rebay, “Efficient implementation of an implicit DG method for CFD - code MIGALE state-of-the-art”, Workshop on “HPC methods for Computational Fluid Dynamics and Astrophysics”, 14-15 November 2017, CINECA, Bologna (Italy). *Invited speaker*

F. Bassi, L. Botti, A. Colombo, A. Crivellini, A. Ghidoni, F. Massa, A. Nigro, G. Noventa, “A high-order implicit DG solver applied to the under-resolved simulation of turbulent flows”, First TILDA Symposium on Industrial LES and DNS, 21-23 November 2016, CERFACS, Toulouse (France)

F. Bassi, L. Botti, A. Colombo, F. Massa “A high-order discontinuous Galerkin approach for incompressible variable density flows”, First TILDA Symposium on Industrial LES and DNS, 21-23 November 2016, CERFACS, Toulouse (France)

Bassi, L. Botti, A. Colombo, “Implicit high-order DG discretization of a hybrid RANS-LES model”. AIAA-CFD Conference at Denver, AIAA Aviation Forum - Special Session: Towards Industrial LES and DNS for Aeronautics, Colorado, June 05-09, 2017

F. Bassi, L. Botti, A. Colombo, A. Ghidoni, G. Noventa, “On the development of an implicit high-order discontinuous Galerkin solver for a hybrid RANS-LES model”, ERCOFTAC Workshop Direct and Large-Eddy Simulation 11 (DLES11), May 29-31 2017, Pisa, Italy

F. Bassi, L. Botti, A. Colombo, A. Ghidoni, G. Noventa, “Tuning an X-LES implementation in an implicit high-order DG method”, Conference/workshop on “High order in Turbulence and Acoustic” + 4th Progress Meeting TILDA, TsAGI, Zhukovsky (Russia), 19 May 2017

F. Bassi, L. Botti, A. Colombo, A. Crivellini, A. Ghidoni, G. Manzinali, F. Massa, A. Nigro, G. Noventa, S. Rebay, “Basics of DG methods with applications to compressible and incompressible flows - code MIGALE state-of-the-art”, Workshop on “HPC methods for Computational Fluid Dynamics and Astrophysics”, 2-4 November 2016, CINECA, Bologna (Italy). *Invited speaker*

F. Bassi, A. Colombo, A. Crivellini, M. Franciolini, Hybrid OpenMP/MPI parallelization of a high-order Discontinuous Galerkin CFD solver. European Congress on Computational Methods in Applied Sciences and Engineering, ECCOMAS 2016 [CS 930], 5-10 June 2016 Crete Island, Greece
doi: 10.7712/100016.2391.8104

F. Massa, G. Noventa F. Bassi, A. Colombo, A. Ghidoni, M. Lorini, High-order linearly implicit two-step peer methods for the Discontinuous Galerkin solution of the incompressible RANS equations. European Congress on Computational Methods in Applied Sciences and Engineering, ECCOMAS 2016 [MS 905], 5-10 June 2016 Crete Island, Greece
doi: 10.7712/100016.1988.8180

A. Ghidoni, M. Lorini, G. Noventa, F. Bassi, A. Colombo, Discontinuous Galerkin solution of the Reynolds Averaged Navier–Stokes and $k\text{-}l\text{-}kt\text{-}\log(\omega)$ transition model equations, European Congress on Computational Methods in Applied Sciences and Engineering,

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ECCOMAS 2016 [MS 905], 5-10 June 2016 Crete Island, Greece
doi: 10.7712/100016.1986.6971

F. Bassi, L. Botti, A. Colombo, A. Crivellini, A. Ghidoni, M. Lorini, F. Massa, G. Noventa, On the implementation of X-LES in a high-order implicit DG solver, European Congress on Computational Methods in Applied Sciences and Engineering, ECCOMAS 2016 [MS 910], 5-10 June 2016 Crete Island, Greece

F. Bassi, L. Botti, A. Colombo, A. Ghidoni, S. Rebay, Implementation of a hybrid RANS-LES approach in an implicit very high-order Discontinuous Galerkin solver, ECFD VI, [STS08] Higher-Order Methods for Aerospace Applications July 20-25, 2014, Barcelona, Spain

F. Bassi, A. Colombo, C. De Bartolo, N. Franchina, A. Ghidoni, A. Nigro, Investigation of high-order temporal schemes for the Discontinuous Galerkin solution of the Navier-Stokes equations, ECFD VI, July 20-25, 2014, Barcelona, Spain

F. Bassi, L. Botti, A. Colombo, N. Franchina, F.C. Massa, A. Ghidoni, S. Rebay, An implicit high-order Discontinuous Galerkin solver for hybrid RANS-LES simulations, SIMAI 2014, [MS10] Numerical methods for coupled problems July 7-10, 2014, Taormina, Italy

A. Ghidoni, D. Pasquale, S. Rebay, A. Colombo, F. Bassi, p-multigrid Discontinuous Galerkin method for compressible turbulent flows. 51st AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition 2013, 7-10 January 2013, Grapevine, TX, USA

F. Bassi, L. Botti, A. Colombo, DG discretization on agglomerated meshes for CFD. Workshop on Polygonal and Polyhedral meshes, 17-19 September, 2012, Università di Milano Bicocca

F. Bassi, L. Botti, A. Colombo, C. De Bartolo, Implicit High-order Discontinuous Galerkin solution of Turbulent Flows with an Explicit Algebraic Reynolds Stress Model. European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012), 10-14 September 2012, Vienna

F. Bassi, L. Botti, A. Colombo, Agglomeration-Based Physical Frame dG Discretizations for High-Order Accurate CFD. European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012), 10-14 September 2012, Vienna

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F. Bassi, L. Botti, A. Colombo, A. Ghidoni, S. Rebay, High-order accurate p-multigrid discontinuous Galerkin method for aerospace applications. 16th International Conference on Finite Elements in Flow Problems (FEF 2011), Germany, Munich, March 23 -25, 2011

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F. Bassi, A. Colombo, N. Franchina, A. Ghidoni, S. Rebay, High-order accurate p-multigrid discontinuous Galerkin solution of the RANS and k- ω turbulence model equations. V European Conference on Computational Fluid Dynamics (ECCOMAS CFD 2010), 14-17 June 2010, Lisbon

Computer skills Competent in CFD solvers (StarCCM+, OpenFOAM, Fluent) and Tecplot and Paraview visualization software.
Competent in Fortran, C, Python, MATLAB languages.
Competent in parallel programming (MPI).