

Publications of the Unit "Fluids-Machines"

2025

Scientific journals/Article

- Pappa, A., Bricteux, L., & De Paepe, W. (20 March 2025). A strategy based on hybrid 0D Chemical Reactor Networks and 1D Flame predictions for flashback prevention in an original H2 fueled micro Gas Turbine combustor without any redesign. "International Journal of Hydrogen Energy, 111", 264 - 277. doi:10.1016/j.ijhydene.2025.02.231
Full Text : [A strategy based on hybrid 0D Chemical Reactor Networks and 1D Flame predictions for flashback prevention in an original H2 fueled micro Gas Turbine com.pdf](#) (Open Access)
- VERHAEGHE, A., DUBOIS, L., Bricteux, L., THOMAS, D., & DE PAEPE, W. (15 March 2025). Absorption-based carbon capture energy penalty reduction for low CO2 content applications: Comparison of performance using different solvents and process configurations on micro gas turbine application. "Energy, 322", 135505. doi:10.1016/j.energy.2025.135505
Full Text : [Accepted manuscript.pdf](#) (Open Access)

Dissertations and theses/Doctoral thesis

- Vigny, U. (2025). "Study of thermal and ground effects in atmospheric flows for wind turbine applications" [Doctoral thesis, UMONS - Université de Mons]. ORBi UMONS-University of Mons. <https://orbi.umons.ac.be/handle/20.500.12907/52276>
Full Text : [manuscript.pdf](#) (Open Access)

2024

Scientific journals/Article

- Tran, T.-S., Babin, C., Fontaneto, F., Verstraete, T., & Coussement, G. (22 November 2024). Understanding the Flow Field in a Highly Loaded Tandem Compressor Cascade. "Journal of Turbomachinery, 147" (6). doi:10.1115/1.4067029
Full Text : [TURBO-24-1180.pdf](#) (Open Access)
- Vigny, U., Voivenel, L., Safdari Shadloo, M., Bénard, P., & Zeoli, S. (2024). Enabling the Use of Unstructured Meshes for the Large Eddy Simulation of Stable Atmospheric Boundary Layers. "Computers and Fluids". doi:10.2139/ssrn.4995353
Full Text : [ssrn-4995353.pdf](#) (Open Access)
- Coquelet, M., Lejeune, M., Bricteux, L., van Vondelen, A. A. W., van Wingerden, J.-W., & Chatelain, P. (10 October 2024). On the robustness of a blade-load-based wind speed estimator to dynamic pitch control strategies. "Wind Energy Science, 9" (10), 1923 - 1940. doi:10.5194/wes-9-1923-2024
Full Text : [wes-9-1923-2024.pdf](#) (Open Access)
- De Meulenaere, R., Verleysen, K., Pappa, A., Bioche, K., De paepe, W., Bricteux, L., & Blondeau, J. (2024). Exploring the impact of stochastic transient phases on the NO emissions from NH3/H2 mixture rich combustion in gas turbines. "Results in Engineering", 102798. doi:10.1016/j.rineng.2024.102798
Full Text : [Exploring the impact of stochastic transient phases on the NO emissions from NH3-H2 mixture rich combustion in gas turbines.pdf](#) (Open Access)

Scientific congresses and symposiums/Unpublished conference/Abstract

- Tene Hedje, P., Sergio Lavagnoli, & Bricteux, L. (2024). "Numerical investigation of a high-speed low-Pressure turbine cascade under nominal and off-design conditions" [Paper presentation]. 15th VKI PhD Symposium, Belgium.
Full Text : [2024_PhD_Symposium_Template___patrick_tenehedje_vki_ac_be.pdf](#) (Open Access)

Scientific congresses and symposiums/Paper published in a book

- Tene Hedje, P.* , Bricteux, L., Bechane, Y., & Lavagnoli, S. (2024). Large Eddy Simulations of a High-Speed Low-Pressure Turbine Cascade at Subsonic and Transonic Mach Numbers. In "Turbomachinery - Design Methods and CFD Modeling for Turbomachinery; Ducts, Noise, and Component Interactions". American Society of Mechanical Engineers (ASME). doi:10.1115/GT2024-127182
- Tran, T.-S., Babin, C., Fontaneto, F., Verstraete, T., & Coussement, G. (2024). UNDERSTANDING THE FLOW FIELD IN A HIGHLY LOADED TANDEM COMPRESSOR CASCADE. In "Turbomachinery - Axial Flow Fan and Compressor Aerodynamics". American Society of Mechanical Engineers (ASME). doi:10.1115/GT2024-122461
Full Text : [GT2024_122461_ASME_Turbo_Expo_2024_FinalPaper.pdf](#) (Open Access)

Scientific congresses and symposiums/Paper published on a website

- Verhaeghe, A., Bricteux, L., Demeyer, F., Blondeau, J., & De paepe, W. (28 June 2024). "Retrofitting an existing Combined Cycle Gas Turbine with Post-combustion Carbon Capture: Assessment of solvent selection impact on performance" [Paper presentation]. Turbo Expo 2024, London, United Kingdom. doi:10.1115/GT2024-125053
Full Text : [GT2024_125053_Final_version.pdf](#) (Open Access)
- Zampini, L., VASSILIS GEORGOPOULOS, Coussement, G., & Verstraete, T. (03 June 2024). "ONE-SHOT OPTIMIZATION FOR THE INVERSE DESIGN OF A QUASI-1D DE LAVAL NOZZLE" [Paper presentation]. ECCOMAS Congress 2024, Lisboa, Portugal.
Full Text : [Eccomas_paper-2.pdf](#) (Open Access)

Dissertations and theses/Doctoral thesis

- Verhaeghe, A. (2024). "Post-combustion carbon capture for gas turbines: assessment of technical feasibility, performance and flexibility" [Doctoral thesis, UMONS - Université de Mons]. ORBi UMONS-University of Mons. <https://orbi.umons.ac.be/handle/20.500.12907/50513>
Full Text : [PhD_manuscript.pdf](#) (Open Access)

2023

Scientific journals/Article

- Verhaeghe, A., Dubois, L., Bricteux, L., Thomas, D., Blondeau, J., & De paepe, W. (2023). Carbon Capture Performance Assessment Applied to Combined Cycle Gas Turbine Under Part-Load Operation. "Journal of Engineering for Gas Turbines and Power, 145" (4). doi:10.1115/1.4055664
Full Text : [GT2022-82892 - Carbon capture performance assessment applied to combined cycle gas turbine under part-load operation.pdf](#) (Open Access)

Scientific congresses and symposiums/Unpublished conference/Abstract

- Pappa, A., Bricteux, L., & De paepe, W. (12 October 2023). "Flashback prevention in a micro Gas Turbine fueled by hydrogen without any combustor redesign" [Paper presentation]. ERCOFTAC Autumn Festival 2023, Liège, Belgium.

Scientific congresses and symposiums/Paper published in a journal

- Tene hedje, P.* , Bechane, Y., Lavagnoli, S., & Bricteux, L.*. (28 September 2023). WALL RESOLVED LARGE-EDDY SIMULATIONS OF HIGH-SPEED LOW-PRESSURE TURBINE CASCADES. "Turbo Expo: Power for Land, Sea and Air, Volume 13B: Turbomachinery — Axial Flow Turbine Aerodynamics", 13. doi:10.1115/GT2023-101251
Full Text : [ASME_Turbo_Expo_2023_Final_paper.pdf](#) (Open Access)

- Coquelet, M., Moens, M., Duponcheel, M., Van Wingerden, J. W., Bricteux, L., & Chatelain, P. (2023). Simulating the helix wake within an actuator disk framework: verification against discrete-blade type simulations. "Journal of Physics. Conference Series, 2505" (1), 012017. doi:10.1088/1742-6596/2505/1/012017
Full Text : [Coquelet_2023_J._Phys.%3A_Conf._Ser._2505_012017.pdf](#) (Open Access)

Scientific congresses and symposiums/Poster

- Tene hedje, P.* , Sergio Lavagnoli, & Bricteux, L.*. (09 March 2023). "WALL RESOLVED LARGE-EDDY SIMULATIONS OF THE SPLEEN LOW-PRESSURE BLADE CASCADE" [Poster presentation]. VKI PhD Symposium, Sint-Genesius-Rode, Belgium.
Full Text : [2023_TeneHedje_Patrick_poster.pdf](#) (Open Access)

Scientific congresses and symposiums/Paper published on a website

- Verhaeghe, A., Mendoza morales, M. J., Blondeau, J., Demeyer, F., Bricteux, L., & De paepe, W. (26 June 2023). "Thermodynamic Assessment of a Combined Cycle Gas Turbine With Exhaust Gas Recirculation Under Part-Load Operation Toward Carbon Capture Penalty Reduction" [Paper presentation]. ASME Turbo Expo 2023: Turbomachinery Technical Conference and Exposition, Boston, United States. doi:10.1115/gt2023-101902
Full Text : [GT2023_101902_Final_Version.pdf](#) (Open Access)

Dissertations and theses/Doctoral thesis

- Pappa, A. (2023). "Fuel and operational flexibility of micro Gas Turbines: assessment of combustor performances, emissions, and stability" [Doctoral thesis, UMONS - Université de Mons]. ORBi UMONS-University of Mons. <https://orbi.umons.ac.be/handle/20.500.12907/46533>
Full Text : [PhD_AP.pdf](#) (Open Access)

Scientific conferences in universities or research centers/Scientific conference in universities or research centers

- Zampini, L., Mueller, L., Lavagnoli, S., Coussement, G., & Verstraete, T. (28 April 2023). "GRADIENT-BASED OPTIMIZATION OF A 3D TURBINE VANE FRAME" [Paper presentation]. ETC15. doi:10.29008/ETC2023-201
Full Text : [ETC2023-201.pdf](#) (Open Access)

2022

Scientific congresses and symposiums/Paper published on a website

- Verhaeghe, A., Dubois, L., Bricteux, L., Thomas, D., & De Paepe, W. (06 November 2022). "Absorption-based carbon capture energy penalty reduction for micro gas turbine applications: investigation of advanced carbon capture configurations" [Paper presentation]. International Conference on Applied Energy -ICAEE2022, Bochum, Germany. doi:10.46855/energy-proceedings-10163
Full Text : [Paper_ICAE 2022.pdf](#) (Open Access)
- Verhaeghe, A., Pappa, A., De Paepe, W., Bénard, P., & Bricteux, L. (03 June 2022). "Large Eddy Simulation of Turbulent Combustion using Adaptive Mesh Refinement in a typical micro Gas Turbine Combustor" [Paper presentation]. Congrès Français de thermique 2022.
- Verhaeghe, A., Pappa, A., De Paepe, W., Bénard, P., & Bricteux, L. (30 March 2022). "Towards fully automatic mesh generation for Large Eddy Simulation of Turbulent Combustion in a typical micro Gas Turbine Combustor" [Paper presentation]. 26th Journées d'Etudes of the Belgian Section of the Combustion Institute.
- Verhaeghe, A., Dubois, L., Bricteux, L., Thomas, D., Blondeau, J., & De Paepe, W. (2022). "Carbon Capture Performance Assessment Applied to Combined Cycle Gas Turbine Under Part-Load Operation" [Paper presentation]. Proceedings of ASME Turbo Expo 2022 Turbomachinery Technical Conference and Exposition.
Full Text : [GT2022_82892.pdf](#) (Open Access)

2021

Scientific journals/Article

- Bioche, K., Bricteux, L., Bertolino, A., Parente, A., & Blondeau, J. (16 November 2021). Large Eddy Simulation of rich ammonia/hydrogen/air combustion in a gas turbine burner. "International Journal of Hydrogen Energy, 46" (79), 39548-39562.
Full Text : [bioche_IJHE.pdf](#) (Open Access)
- Cordier, M., Bénard, P., Lybaert, P., De Paepe, W., & Bricteux, L. (2021). On the Need for Turbulence Chemistry Interaction Modelling in Highly Resolved Large-Eddy Simulations of Mild Combustion. "Flow, Turbulence and Combustion". doi:10.1007/s10494-021-00282-x

Scientific congresses and symposiums/Unpublished conference/Abstract

- Vigny, U., Zeoli, S., Houtin-Mongrolle, F., Bricteux, L., & Bénard, P. (28 May 2021). "Dynamic mesh adaptation to capture wind turbine wake during LES simulations" [Paper presentation]. Wind Energy Science Conference, Online, Germany.

Scientific congresses and symposiums/Paper published on a website

- Verhaeghe, A., Dubois, L., Bricteux, L., Thomas, D., & De Paepe, W. (29 November 2021). "First step towards a more efficient carbon-clean micro gas turbine: solvent selection and process parameters optimization" [Paper presentation]. International Conference on Applied Energy, Bangkok, Thailand.
Full Text : [Paper_ICAE2021.pdf](#) (Open Access)
- Verhaeghe, A., Dubois, L., Bricteux, L., Thomas, D., & De Paepe, W. (19 October 2021). "Amine solvent selection and carbon capture process configuration optimisation for micro gas turbines" [Paper presentation]. 6th Post Combustion Capture Conference.
Full Text : [PCCC6_abstract.pdf](#) (Open Access)

Dissertations and theses/Doctoral thesis

- Cordier, M. (2021). "Large eddy simulation of MILD combustion, application to free-jets and a lab-scale furnace" [Doctoral thesis, Université de Mons]. ORBi UMONS-University of Mons.
<https://orbi.umons.ac.be/handle/20.500.12907/29310>

2020

Scientific journals/Article

- Zeoli, S., Balarac, G., Bénard, P., Georis, G., Houtin-Mongrolle, F., & Bricteux, L. (2020). Large eddy simulation of wind turbine wakes using adaptative mesh refinement. "Journal of Physics. Conference Series". doi:10.1088/1742-6596/1618/6/062056
Full Text : [Zeoli_2020_J._Phys._Conf._Ser._1618_062056.pdf](#) (Open Access)
- Houtin-Mongrolle, F., Bricteux, L., Bénard, P., Lartigue, G., Moureau, V., & Reveillon, J. (2020). Actuator line method applied to grid turbulence generation for large-Eddy simulations. "Journal of Turbulence".
Full Text : [Actuator_line_method_applied_to_grid_turbulence_generation_for_large_Eddy_simulations.pdf](#) (Open Access)
- Houtin-Mongrolle, F., Bénard, P., Moureau, V., Lartigue, G., Bricteux, L., & Reveillon, J. (2020). Actuator grid method for turbulence generation applied to yawed wind turbines. "Journal of Physics. Conference Series". doi:10.1088/1742-6596/1618/6/062064
Full Text : [HoutinE28093Mongrolle_2020_J._Phys.3A_Conf._Ser._1618_062064.pdf](#) (Open Access)
- Coquelet, M., Bricteux, L., Lejeune, M., & Chatelain, P. (2020). Biomimetic individual pitch control for load alleviation. "Journal of Physics. Conference Series". doi:10.1088/1742-6596/1618/2/022052

Full Text : [Coquelet_2020_J_Phys.3A_Conf._Ser._1618_022052.pdf](#) (Open Access)

- Chodzynski, K. J., Uzureau, P., Nuyens, V., Rousseau, A., Coussement, G., & Zouaouia-Boudjeltia, K. (2020). The impact of arterial flow complexity on flow diverter outcomes in aneurysms. "Nature Research".
Full Text : [s41598-020-67218-9.pdf](#) (Open Access)
- Chatel, A., Verstraete, T., & Coussement, G. (2020). Multipoint optimization of an axial turbine cascade using a hybrid algorithm. "Journal of Turbomachinery".
Full Text : [FMANU-TURBO-19-1284.pdf](#) (Open Access)

Scientific congresses and symposiums/Paper published in a journal

- Cordier, M., Pappa, A., Bénard, P., Lybaert, P., Feldheim, V., & Bricteux, L. (2020). "Simulation aux grandes échelles de la combustion diluée dans un four de 30kW" [Paper presentation]. SFT 2020 28ème colloque français de thermique, Belfort, France.
Full Text : [119_doi.pdf](#) (Open Access)

Scientific congresses and symposiums/Poster

- Bricteux, L., Lejeune, M., & Chatelain, P. (05 March 2020). "Biomimetic individual pitch control for load alleviation" [Poster presentation]. BERA Wind PhD Day 2020, Gent, Belgium.
Full Text : [COQUELET_Marion_IPC_poster.pdf](#) (Open Access)

2019

Parts of books/Contribution to collective works

- Cagnone, J. S., Zeren, Z., Chatel, A., Rasquin, M., Hillewaert, K., & Bricteux, L. (2019). Assessment of High-Order Discontinuous Galerkin Methods for LES of Transonic Flows. In "Direct and Large-Eddy Simulation XI" (pp. 83-90). Springer.

Scientific journals/Article

- Gorlé, C., Zeoli, S., & Larsson, J.-Å. (2019). Epistemic uncertainty quantification for Reynolds-averaged Navier-Stokes modeling of separated flows over streamlined surfaces. "Physics of Fluids".
Full Text : [1.5086341.pdf](#) (Open Access)

Scientific congresses and symposiums/Unpublished conference/Abstract

- Coudou, N., Bricteux, L., van Beeck, J., & Chatelain, P. (24 November 2019). "Development of wake centerline detection algorithms for the study of wind turbine wake meandering" [Paper presentation]. 72nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics (APS-DFD), Seattle, United States - Washington.
- Coquelet, M., Bricteux, L., Lejeune, M., & Chatelain, P. (24 November 2019). "Biomimetic individual pitch control for wind turbines" [Paper presentation]. 72nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics (APS-DFD), Seattle, United States - Washington.
Full Text : [Abstract_APS2019.pdf](#) (Open Access)
- Bricteux, L., Zeoli, S., Gazdallah, M., Pianko-Oprych, P., Leroy, G., & Bénard, P. (24 November 2019). "LES of microscale winds in complex configurations" [Paper presentation]. 72nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics (APS-DFD), Seattle, United States - Washington.
Full Text : [APS_-72nd_Annual_Meeting_of_the_APS_Division_of_Fluid_Dynamics_-_Event_-_LES_of_microscale_winds_in_.pdf](#) (Open Access)

- Coquelet, M., Lejeune, M., Moens, M., Bricteux, L., & Chatelain, P. (20 June 2019). "Local estimation of wind speed and turbulence using wind turbine blades as sensors" [Paper presentation]. Wind Energy Science Conference (WESC), Cork, Ireland.
Full Text : [Abstract_WESC19.pdf](#) (Open Access)
- Coudou, N., van Beeck, J., Bricteux, L., & Chatelain, P. (12 March 2019). "Effects of the fidelity level on the numerical reproduction of the wake meandering phenomenon" [Paper presentation]. Symposium of VKI PhD Research 2019, Sint-Genesius-Rode, Belgium.

Scientific congresses and symposiums/Paper published in a journal

- Gambale, A., Mosca, G., & Gremmo, S. (2019). "Mesh generation for building aerodynamics: challenges, best practices and lessons learned" [Paper presentation]. MASCOT2018 Conference, Rome, Italy.
- Chatel, A., Verstraete, T., & Coussement, G. (2019). "Multipoint Optimization of an Axial Turbine Cascade Using a Hybrid Algorithm" [Paper presentation]. ASME Turbo Expo 2019: Turbomachinery Technical Conference and Exposition, Phoenix, United States - Arizona. doi:10.1115/GT2019-91471
- Coudou, N., van Beeck, J., Bricteux, L., & Chatelain, P. (2019). "Effects of the fidelity level of numerical simulations on the wake meandering phenomenon" [Paper presentation]. Wake Conference 2019, Visby-Gotland, Sweden.
- Coudou, N., van Beeck, J., Bricteux, L., & Chatelain, P. (2019). "Effects of the fidelity level on the numerical reproduction of the wake meandering phenomenon" [Paper presentation]. Symposium of VKI PhD Research 2019, Sint-Genesius-Rode, Belgium.

2018

Parts of books/Contribution to collective works

- Zeoli, S., Carton de Wiart, C., Hillewaert, K., Colassin, B., & Bricteux, L. (2018). DNS and ILES of wall bounded flows using a discontinuous galerkin method and inlet synthetic turbulence. In "Direct and Large-Eddy Simulation X" (pp. 433_439). Springer.

Scientific journals/Article

- Bénard, P., Viré, A., Moureau, V., Lartigue, G., Beaudet, L., Deglaire, P., & Bricteux, L. (2018). Large-Eddy Simulation of wind turbines wakes including geometrical effects. "Computers and Fluids".
- Temel, O., Bricteux, L., & van Beeck, J. (2018). Coupled WRF-OpenFOAM study of wind flow over complex terrain. "Journal of Wind Engineering and Industrial Aerodynamics".
Full Text : [JWEIA.pdf](#) (Open Access)

Scientific congresses and symposiums/Unpublished conference/Abstract

- Bénard, P., Viré, A., Moureau, V., Lartigue, G., & Bricteux, L. (12 October 2018). "Large-eddy simulations of wind turbine wakes" [Paper presentation]. SES 2018 55th annual technical meeting, Madrid, Spain.
Full Text : [Vire_SES2018.pdf](#) (Open Access)
- Gambale, A., Mosca, G., & Gremmo, S. (02 October 2018). "Mesh generation for building aerodynamics: challenges, best practices and lessons learned" [Paper presentation]. MASCOT2018 Conference, Rome, Italy.
- Coudou, N., van Beeck, J., Bricteux, L., & Chatelain, P. (20 September 2018). "Development of wake meandering detection algorithms and their application to large eddy simulations of an isolated wind turbine" [Paper presentation]. 14th EAWE PhD Seminar on Wind Energy, Bruxelles, Belgium.
- Coudou, N., van Beeck, J., Chatelain, P., Bricteux, L., & Marichal, Y. (22 June 2018). "Chatelain Development of wake meandering detection algorithms and their application to large eddy simulations of an isolated wind turbine and a wind farm" [Paper presentation]. The Science of Making Torque from Wind (TORQUE 2018), Milan, Italy.

- Moureau, V., Bénard, P., Lartigue, G., Bricteux, L., Beaudet, L., & Viré, A. (28 May 2018). "Highly resolved large-eddy simulation of wind turbine wakes" [Paper presentation]. 44e Congrès National d'Analyse Numérique CANUM 2018, cap d'agde, France.
- Carlier, S., Saussez, J., Scalia, A., Chodzynski, K., Nishio, S., Thayse, K., Brunner, P., Zouaoui Boudjeltia, K., & Coussement, G. (10 March 2018). "IN VIVO, IN VITRO AND IN SILICO COMPARISON OF TWO DEVICES TO MEASURE FRACTIONAL FLOW RESERVE" [Paper presentation]. AMERICAN COLLEGE OF CARDIOLOGY, Orlando, United States - Florida.
Full Text : [ACC 2018 A1082.full.pdf](#) (Open Access)
- Coudou, N., van Beeck, J., Chatelain, P., & Bricteux, L. (06 March 2018). "Development of wake meandering detection algorithms and their application to large eddy simulations of a wind turbine" [Paper presentation]. Symposium of VKI PhD Research 2018, Sint-Genesius-Rode, Belgium.
- Chatel, A., Verstraete, T., & Coussement, G. (05 March 2018). "Single-point optimization of the LS89 turbine cascade using a hybrid algorithm" [Paper presentation]. 9th Symposium on the doctoral research of the Von Karman Institute for Fluid Dynamics, Bruxelles, Belgium.
Full Text : [2018-AC-GC-VKI.pdf](#) (Open Access)

Scientific congresses and symposiums/Paper published in a journal

- Coussement, G., Verstraete, T., Mueller, L., & Chatel, A. (2018). "SINGLE-POINT OPTIMIZATION OF THE LS89 TURBINE CASCADE USING AN HYBRID ALGORITHM" [Paper presentation]. ASME Turbo Expo 2018: Turbomachinery Technical Conference & Exposition, Lillestrøm (Oslo), Norway.
- Coudou, N., van Beeck, J., Chatelain, P., & Bricteux, L. (2018). "Development of wake meandering detection algorithms and their application to large eddy simulations of a wind turbine" [Paper presentation]. Symposium of VKI PhD Research 2018, Sint-Genesius-Rode, Belgium.

Dissertations and theses/Doctoral thesis

- Zeoli, S. (2018). "Numerical simulation of turbulent flows with application to wind engineering problems" [Doctoral thesis, Université de Mons]. ORBi UMONS-University of Mons. <https://orbi.umons.ac.be/handle/20.500.12907/29669>

Diverse speeches and writings/Article for a general audience

- Coussement, G. (2018). Une équipe de l'UMONS et ULB obtient une validation internationale. "Live Style Magazine".
- Coussement, G. (2018). Montigny-le-Tilleul: un coeur mécanique pour éviter des tests sur les animaux. "RTBF.be".
- Coussement, G. (2018). Alternative à l'expérimentation animale à l'essai au CHU. "La Nouvelle Gazette".
- Coussement, G. (2018). Cette machine carolo va aider l'humanité à voyager vers Mars. "DH".
- Coussement, G. (2018). Cette machine carolo va aider l'humanité à voyager vers Mars. "La Libre".

Diverse speeches and writings/Other

- Coussement, G., Zouaouia-Boudjeltia, K., & CHODZYNSKI, K. (2018). "Santé - Prévention cardiovasculaire - RTBF JT13h".
- Coussement, G., Zouaouia-Boudjeltia, K., & CHODZYNSKI, K. (2018). "Une innovation révolutionnaire dans le domaine de la santé au CHU - Télé Sambre".
- Coussement, G., Zouaouia-Boudjeltia, K., & CHODZYNSKI, K. (2018). "Un coeur mécanique d'étude contre les maladies cardiovasculaires - RTBF auvio Vivacité".
- Coussement, G., Zouaouia-Boudjeltia, K., & CHODZYNSKI, K. (2018). "Prouesse de conception d'un coeur mécanique - RTBF Radio (RTBF auvio)".

2017

Scientific journals/Article

- Coudou, N., Buckingham, S., Bricteux, L., & van Beeck, J. (2017). Experimental Study on the Wake Meandering Within a Scale Model Wind Farm Subject to a Wind-Tunnel Flow Simulating an Atmospheric Boundary Layer. "Boundary-Layer Meteorology".
- Temel, O., Porchetta, S., Bricteux, L., & van Beeck, J. (2017). RANS closures for non-neutral microscale CFD simulations sustained with inflow conditions acquired from mesoscale simulations. "Applied Mathematical Modelling".
- Bricteux, L., Zeoli, S., & Bourgeois, N. (2017). Validation and scalability of an open source parallel flow solver. "Concurrency and Computation: Practice and Experience".
Full Text : [OPENFOAM_TAYLOR_GREEN_1600v3.pdf](#) (Open Access)
- GONZALEZ HORCAS, S., DEBRABANDERE, F., TARTINVILLE, B., HIRSCH, C., & Coussement, G. (01 August 2017). Extension of the Non-Linear Harmonic method for the study of the dynamic aeroelasticity of Horizontal Axis Wind Turbines. "Journal of Fluids and Structures, 73", 100-124.
Full Text : [S.Gonzalez_Elsevier_2017.pdf](#) (Open Access)

Scientific congresses and symposiums/Unpublished conference/Abstract

- Winckelmans, G., Thiry, O., Duponcheel, M., Bricteux, L., & De Visscher, I. (22 November 2017). "Turbulent wake vortex system at equilibrium, and its interaction with a ground at $Re_{\Gamma} = 2.0 \times 10^5$ " [Paper presentation]. APS DFD meeting, Denver, United States.
- Coudou, N., Chatelain, P., van Beeck, J., & Bricteux, L. (21 November 2017). "Determination of wind-turbine-wake centerline for the analysis of the wake-meandering phenomenon" [Paper presentation]. APS DFD meeting, Denver, United States.
- Bricteux, L., Bénard, P., Zeoli, S., Moureau, V., Lartigue, G., & Viré, A. (21 November 2017). "Wall modeled LES of wind turbine wakes with geometrical effects" [Paper presentation]. APS DFD meeting, Denver, United States.
- Coudou, N., Chatelain, P., van Beeck, J., & Bricteux, L. (20 November 2017). "Determination of wind-turbine-wake centerline for the analysis of the wake-meandering phenomenon" [Paper presentation]. APS DFD meeting, Denver, United States.
- Coudou, N., Buckingham, S., & van Beeck, J. (01 June 2017). "Experimental study on the wind-turbine wake meandering inside a scale model wind farm placed in an atmospheric-boundary-layer wind tunnel" [Paper presentation]. wake conference 2017, Visby-Gotland, Sweden.
- Coudou, N., van Beeck, J., Bricteux, L., & Chatelain, P. (01 March 2017). "Numerical and experimental investigations of the meandering phenomenon in wind-turbines wakes" [Paper presentation]. Symposium of VKI PhD Research, Sint-Genesius-Rode, Belgium.

Scientific congresses and symposiums/Paper published in a journal

- Viré, A., Coudou, T., Krishnan, N., Bricteux, L., & Schmehl, R. (2017). "Direct Numerical Simulations of Flow Past a Leading-Edge Inflatable Wing" [Paper presentation]. Airborne Wind Energy Conference 2017, Freiburg , Germany.
- Bénard, P., Bricteux, L., Moureau, V., Lartigue, G., Beaudet, L., Laine, R., & Viré, A. (2017). "Highly resolved Large-Eddy Simulation of wind turbine wakes" [Paper presentation]. ECCOMAS Young Investigators Conference 2017, Milan, Italy.
- Zeoli, S., Bricteux, L., & Gorlé, C. (2017). "RANS Turbulence Model Form Uncertainty Quantification for the flow around a wall-mounted cube" [Paper presentation]. European-African Conference on Wind Engineering 2017, Liège, Belgium.
- Bénard, P., Bricteux, L., Moureau, V., Lartigue, G., Beaudet, L., Laine, R., & Viré, A. (2017). "Highly resolved Large-Eddy Simulation of wind turbine wakes" [Paper presentation]. Wind Energy Science Conference 2017, Lyngby, Denmark.

- Dias, V., Giorgetti, S., Pochet, M., Bram, S., Bricteux, L., Verhelst, S., Blondeau, J., Jeanmart, H., Contino, F., & Parente, A. (2017). "Contribution of chemical storage to the future energy networks" [Paper presentation]. 2nd Renewable Energy Sources - Research and Business RESRB 2017 conference, wroclaw, Unknown/unspecified.
- Coudou, N., Buckingham, S., & van Beeck, J. (2017). "Experimental study on the wind-turbine wake meandering inside a scale model wind farm placed in an atmospheric-boundary-layer wind tunnel" [Paper presentation]. wake conference 2017, Visby-Gotland, Sweden.
- Chatelain, P., Duponcheel, M., Zeoli, S., Buffin, S., Caprace, D.-G., Winckelmans, G., & Bricteux, L. (2017). "Investigation of the effect of inflow turbulence on vertical axis wind turbine wakes" [Paper presentation]. wake conference 2017, Visby-Gotland, Sweden.
- Zeren, Z., Chatel, A., Cagnone, J. S., Rasquin, M., Hillewaert, K., & Bricteux, L. (2017). "Assessment of high - order discontinuous Galerkin methods on LES simulations of transonic flows" [Paper presentation]. Ercoftac workshop on direct and large eddy simulation 11, Pisa, Italy.
Full Text : [Conf_Italie_Presentation-1.pdf](#) (Open Access)
- Bénard, P., Bricteux, L., Moureau, V., Lartigue, G., Beaudet, L., Laine, R., & Viré, A. (2017). "Highly resolved Large-Eddy Simulation of wind turbine wakes" [Paper presentation]. 29th International Conference on Parallel Computational Fluid Dynamics, Glasgow, United Kingdom.
- Temel, O., Bricteux, L., & van Beeck, J. (2017). "ASSESSMENT OF EDDY VISCOSITY MODELS FOR THE MULTISCALE MODELLING OF THE NEUTRAL AT MOSPHERIC BOUNDARY LAYER" [Paper presentation]. International Conference on Wind Energy Harvesting 2017, Coimbra, Portugal.
Full Text : [WINERCOST17_presentation_Orkun_Temel.pdf](#) (Open Access)
- Nigro, R., Wunsch, D., Coussement, G., & HIRSCH, C. (2017). "Uncertainty Quantification in Internal Flows Applied to Manufacturing Tolerances (AIAA 2017-1200): Uncertainty Quantification in Internal Flow" [Paper presentation]. 55th AIAA Aerospace Sciences Meeting, Grapevin, Texas, United States - Texas. doi:10.2514/6.2017-1200
Full Text : [R.Nigro_AIAA_2017.pdf](#) (Open Access)

Scientific congresses and symposiums/Poster

- Coudou, N., Chatelain, P., van Beeck, J., & Bricteux, L. (04 December 2017). "Determination of wind-turbine-wake centreline for the analysis of the wake-meandering phenomenon" [Poster presentation]. BERA Wind PhD Day 2017, Ghent, Belgium.
- Gremmo, S., Gael, V., Jean-François, R., HIRSCH, C., & Coussement, G. (20 September 2017). "Robust partial remeshing strategy for position management and body motion in CFD simulations" [Poster presentation]. 26th International Meshing Roundtable, Barcelona, Spain.
- Coudou, N., van Beeck, J., Bricteux, L., & Chatelain, P. (01 March 2017). "Numerical and experimental investigations of the meandering phenomenon in wind-turbines wakes" [Poster presentation]. Symposium of VKI PhD Research, Sint-Genesius-Rode, Belgium.

2016

Parts of books/Contribution to collective works

- GONZALEZ-HORCAS, S., DEBRABANDERE, F., Tartainville, B., HIRSCH, C., & Coussement, G. (2016). CFD Study of DTU 10MW RWT Aeroelasticity and Rotor-Tower Interactions. In "MARE-WINT New Materials and Reliability in Offshore Wind Turbine Technology" (pp. 309-334). Springer International Publishing.
Full Text : [S.Gonzalez_Mare-Wint_2016.pdf](#) (Open Access)
- Nigro, R. (2016). Uncertainty Quantification In Internal Flows. In "Application of Sensitivity Analysis and Uncertainty Quantification to Military Vehicle Design (AVT-191)". -.

Scientific journals/Article

- CHODZYNSKI, K., EKER, O. F., VANROSSOMME, A. E., Ribeiro de Sousa, D., Coussement, G., Vanhamme, L., DUBOIS, F., BONAFAE, A., Chopard, B., Courbebaisse, G., & Zouaouia-Boudjeltia, K. (18 October 2016). Does the

gravity orientation of saccular aneurysms influence hemodynamics? An experimental study with and without flow diverter stent. "Journal of Biomechanics, PII S0021-9290(16)31088-0". doi:10.1016/j.jbiomech.2016.10.007

Full Text : [2016-KC-GC-Gravity.pdf](#) (Open Access)

- Chodzyski, K., Gremmo, S., EKER, O. F., Lalmand, J., Aminian, A., Ribeiro de Sousa, D., Zouaouia-Boudjeltia, K., & Coussement, G. (2016). Hemodynamic numerical simulations of the disturbance due to intracoronary flow measurements by a Doppler guide wire. "BioMedical Engineering OnLine". doi:10.1186/s12938-016-0234-6
Full Text : [2016-KC-GC-Hemodynamic.pdf](#) (Open Access)
- GONZALEZ-HORCAS, S., DEBRABANDERE, F., Tartainville, B., HIRSCH, C., & Coussement, G. (2016). Rotor-tower interactions of DTU 10MW reference wind turbine with a non-linear harmonic method. "Wind Energy". doi:10.1002/we.2027
Full Text : [10.1002_we.2027 \(1\).pdf](#) (Open Access)
- Bricteux, L., Duponcheel, M., De Visscher, I., & Winckelmans, G. (2016). LES investigation of the transport and decay of various-strengths wake vortices in ground effect and subjected to a turbulent crosswind. "Physics of Fluids".

Scientific congresses and symposiums/Unpublished conference/Abstract

- GONZALEZ HORCAS, S., DEBRABANDERE, F., Tartainville, B., HIRSCH, C., & Coussement, G. (05 December 2016). "CFD Methodology for Wind Turbines Fluid-Structure Interactions" [Paper presentation]. BERA Wind - PhD Days, Louvain-la-Neuve, Belgium.
Full Text : [S.Gonzalez_BERA_Pitch2016.pdf](#) (Open Access)
- Gorlé, C., Zeoli, S., & Bricteux, L. (20 November 2016). "RANS turbulence model form uncertainty quantification for wind engineering flows" [Paper presentation]. 69th Annual Meeting of the APS Division of Fluid Dynamics, Portland, United States - Oregon.
- Nigro, R., Wunsch, D., Coussement, G., & HIRSCH, C. (21 September 2016). "Uncertainty Quantification of manufacturing variability applied to the IC-09 (Aerodynamic High Pressure Compressor Rotor Blade Design)" [Paper presentation]. 2nd UMRIDA UQ and RDO Symposium & Workshop, Brussels, Belgium.
- Nigro, R., Wunsch, D., Coussement, G., & HIRSCH, C. (20 September 2016). "Robust Design Optimization of the BC-01 (Rotor 37) test case and Best Practices for RDO in engineering practice" [Paper presentation]. 2nd UMRIDA UQ and RDO Symposium & Workshop, Brussels, Belgium.
- Nigro, R., Wunsch, D., Coussement, G., & HIRSCH, C. (06 April 2016). "Manufacturing Tolerances in Industrial Turbo-Machinery Design" [Paper presentation]. SIAM Conference on Uncertainty Quantification, Lausanne, Switzerland.
- Nigro, R., & Coussement, G. (28 January 2016). "Uncertainty quantification of simultaneous operational and geometrical uncertainties in turbomachinery design practice" [Paper presentation]. Journée de l'Institut Energie, Mons, Belgium.

Scientific congresses and symposiums/Paper published in a journal

- Zeoli, S., Gorlé, C., & Bricteux, L. (2016). "Turbulence model form uncertainty quantification for bluff body RANS simulations" [Paper presentation]. Principal Organizers: 18th International Colloquium on Bluff Body Aerodynamics and Applications, Northeastern University, Boston, Massachusetts, United States.
- Gorlé, C., Hao, Z., Zeoli, S., & Bricteux, L. (2016). "Quantifying Turbulence Model Form Uncertainty in Rans Simulations of Complex Flow and Scalar Transport" [Paper presentation]. SIAM Conference on Uncertainty Quantification, Lausanne, Switzerland.

Scientific congresses and symposiums/Poster

- GONZALEZ HORCAS, S., DEBRABANDERE, F., Tartainville, B., HIRSCH, C., & Coussement, G. (05 December 2016). "CFD Methodology for Wind Turbines" [Poster presentation]. BERA Wind - PhD Days, Louvain-la-Neuve, Belgium.
Full Text : [poster A4 BERA-Wind - UMONS - Horcas, al. & Coussement - Dec2016.pdf](#) (Open Access)[poster B1 BERA-Wind - UMONS - Horcas, al. & Coussement - Dec2016.pdf](#) (Open Access)[poster B1 BERA-Wind - UMONS - Horcas, al. & Coussement - Dec2016.pdf](#) (Open Access)

- Coudou, N., Buckingham, S., Bricteux, L., & van Beeck, J. (05 December 2016). "Experimental study on the wind-farm wake meandering in an ABL wind tunnel" [Poster presentation]. BERA Wind - PhD Days, Louvain-la-Neuve, Belgium.

Diverse speeches and writings/Other

- Nigro, R., Wunsch, D., Coussement, G., & HIRSCH, C. (2016). "Robust design of Rotor 37 with geometric and operational uncertainties".

2015

Parts of books/Contribution to collective works

- GONZALEZ-HORCAS, S., DEBRABANDERE, F., TARTINVILLE, B., HIRSCH, C., & Coussement, G. (2015). Hybrid Mesh Deformation Tool for Offshore Wind Turbines Aeroelasticity Prediction. In "CFD for Wind and Tidal Offshore Turbines" (pp. 83-94). Editions Springer. doi:10.1007/978-3-319-16202-7_8

Scientific journals/Article

- Chodzynski, K., Zouaouia-Boudjeltia, K., Lalmand, J., Aminian, A., Vanhamme, L., Ribeiro de Sousa, D., Gremmo, S., Bricteux, L., Renotte, C., Courbebaisse, G., & Coussement, G. (2015). An in vitro test bench reproducing coronary blood flow signals. "BioMedical Engineering OnLine". doi:10.1186/s12938-015-0065-x
Full Text : [2015-KC-GC-BioMedicalEngineering.pdf](#) (Open Access)
- Carton de Wiart, C., Hillewaert, K., Bricteux, L., & Winckelmans, G. (11 March 2015). Implicit LES of free and wall-bounded turbulent flows based on the discontinuous Galerkin/symmetric interior penalty method. "International Journal for Numerical Methods in Fluids, 78" (6), 335-354.

Scientific congresses and symposiums/Unpublished conference/Abstract

- Wunsch, D., Nigro, R., & HIRSCH, C. (09 December 2015). "Sparse probabilistic collocation method within the integrated industrial CFD environment FINE" [Paper presentation]. UMRIDA Workshop on Uncertainty Quantification, Delft, Netherlands.
Full Text : [UMRIDA_UQ_Workshop_WunschNigroHirsch.pdf](#) (Open Access)

Scientific congresses and symposiums/Paper published in a journal

- Hao, Z., Zeoli, S., Bricteux, L., & Górlé, C. (2015). "Turbulence model form uncertainty quantification in OpenFOAM" [Paper presentation]. 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, United States - Massachusetts.
Full Text : [Hao_APS2015.pptx.pdf](#) (Open Access)
- Wunsch, D., Nigro, R., Coussement, G., & HIRSCH, C. (2015). "Uncertainty quantification of simultaneous operational and geometrical uncertainties in turbomachinery design practice" [Paper presentation]. 11th International Gas Turbine Congress, Toranomon Hills, Tokyo, Japan.
Full Text : [IGTC_2015_UncertaintyQuantification_Submission_244.pdf](#) (Open Access)
- De Maesschalk, C., Lacor, C., Paniagua, G., Lavagnoli, S., Remiot, A., & Bricteux, L. (2015). "Performance robustness of turbine squealer tip designs due to manufacturing and engine operation" [Paper presentation]. ISABE 22nd international symposium on air breathing engines, Phoenix, United States - Arizona.
- GONZALEZ-HORCAS, S., DEBRABANDERE, F., Tartainville, B., HIRSCH, C., & Coussement, G. (2015). "A new, high fidelity offshore wind turbines aeroelasticity prediction method with considerable CPU time reduction" [Paper presentation]. EWEA Offshore, Copenhagen, Denmark.
Full Text : [S.Gonzalez_EWEA_2015.pdf](#) (Open Access)
- Wunsch, D., Nigro, R., Coussement, G., & HIRSCH, C. (2015). "Quantification of combined operational and geometrical uncertainties in turbo-machinery design" [Paper presentation]. ASME Turbo Expo, Montreal, Canada.

Full Text : [GC-RN-ASME_Turbo_Expo-GT2015-43399.pdf](#) (Open Access)

Scientific congresses and symposiums/Poster

- Corso, P., & Coussement, G. (22 May 2015). "Outils de modélisation haute-fidélité de l'hémodynamique pour la prévention des embolies cérébrales d'origine cardiaque à l'aide de stents-filtres" [Poster presentation]. Première Journée d'Etudes UMHAP, Mons, Belgium.
Full Text : [2015-PCorso-UMHAP.pdf](#) (Open Access)
- GONZALEZ-HORCAS, S., DEBRABANDERE, F., Tartainville, B., HIRSCH, C., & Coussement, G. (10 March 2015). "A new, high fidelity offshore wind turbines aeroelasticity prediction method with considerable CPU time reduction" [Poster presentation]. EWEA Offshore, Copenhagen, Denmark.
Full Text : [EWEA2015_POSTER_SGH_FORMAT_v13.pdf](#) (Open Access)

E-prints, Working papers and Research blog/Working paper

- Gremmo, S., Antonik, I., Corso, P., HIRSCH, C., & Coussement, G. (2015). "Partial remeshing strategy for CFD simulations when large displacements of moving bodies are taken into account". ORBi UMONS-University of Mons. <https://orbi.umons.ac.be/handle/20.500.12907/8950>.

Diverse speeches and writings/Article for a general audience

- Contino, F., Jeanmart, H., Coussement, A., Verhelst, S., & Bricteux, L. (2015). Scandale VW: pourquoi frauder sur les émissions polluantes? "Le Soir".

Diverse speeches and writings/Other

- Nigro, R. (2015). "Validation of PCA and KLE methods for general geometrical uncertainties".
- Nigro, R. (2015). "Report on non-intrusive PCM applications with large number of uncertainties".

2014

Scientific congresses and symposiums/Unpublished conference/Abstract

- Zeoli, S., & Bricteux, L. (25 November 2014). "Numerical prediction of pollutant dispersion and transport in an atmospheric boundary layer" [Paper presentation]. 67th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, United States - California.
- Wunsch, D., Nigro, R., Coussement, G., & HIRSCH, C. (08 October 2014). "Propagation of generalized geometrical uncertainties in an integrated CFD design environment by means of a sparse collocation method" [Paper presentation]. Dresdner Probabilistik Workshop, Dresden, Germany.
- Corso, P., Coussement, G., Gremmo, S., & Chodzyski, K. (23 June 2014). "PIV study of aneurysmal flow with and without Flow-Diverter stent and comparison with numerical results" [Paper presentation]. International Conference on Applications for Image based Measurements, Leipzig, Germany.
- Nigro, R., Wunsch, D., Coussement, G., & HIRSCH, C. (26 May 2014). "Propagation of combined and geometrical uncertainties in an integrated CFD design environment by means of a sparse collocation method" [Paper presentation]. Workshop on Uncertainty Quantification in Computational Fluid Dynamics, Pisa, Italy.

Scientific congresses and symposiums/Paper published in a journal

- Corso, P., Gremmo, S., & Coussement, G. (2014). "Effect of Flow-Diverter stent on in vitro aneurysmal flow" [Paper presentation]. International Conference on Biomedical Engineering and Systems, Prague, Czechia.

- Horcas, S. G., DEBRABANDERE, F., Tartainville, B., HIRSCH, C., & Coussement, G. (2014). "Mesh Deformation Tool for Offshore Wind Turbines - Fluid-Structure Interaction" [Paper presentation]. 11th World Congress on Computational Mechanics, Barcelona, Spain.
Full Text : [Mesh Deformation Tool for Offshore Wind Turbine_Fluid-Structure Intercation.pdf](#) (Open Access)
- Corso, P., Coussement, G., Gremmo, S., & Chodzynski, K. (2014). "PIV measurements in an intracranial aneurysm silicone model" [Paper presentation]. 17th International Symposium on Applications of Laser Techniques to Fluid Mechanics, Lisbon, Portugal.
Full Text : [17th_Symposium_Lisbon_final_paper_Pascal_Corso.pdf](#) (Open Access)

Scientific congresses and symposiums/Poster

- Ledeganck, R., Zeoli, S., Hantson, A.-L., & Bricteux, L. (01 May 2014). "Experimental and numerical investigations on biofuels knocking behavior" [Poster presentation]. 23rd journées d'études of the belgian section of the combustion institute; Bruxelles; Belgique; 2014, Bruxelles, VUB, Belgium.
Full Text : [poster.pdf](#) (Open Access)

Patents/Patent

- Chodzynski, K., Zouaouia-Boudjeltia, K., & Coussement, G. (17 September 2014). "Device for simulating blood flow".
Full Text : [2015-GC-Brevet EP2779144A1 - Device for simulating blood flow - GoogleBrevets.pdf](#) (Open Access)

E-prints, Working papers and Research blog/Working paper

- Gremmo, S., Antonik, I., Nigro, R., HIRSCH, C., & Coussement, G. (2014). "Partial Remeshing Strategy for CFD Simulations when Large Displacements are Taken into Account". ORBi UMONS-University of Mons.
<https://orbi.umons.ac.be/handle/20.500.12907/14886>.

2013

Scientific journals/Article

- Chodzynski, K., Conotte, S., Vanhamme, L., Van Antwerpen, P., Kerkhofs, M., Legros, J. L., Vanhaeverbeek, M., Van Meerhaeghe, A., Coussement, G., Zouaoui Boudjeltia, K., & Legrand, A. (02 April 2013). A new device to mimic intermittent hypoxia in mice. "PLOS ONE, 8" (4), 1-10.
Full Text : [Conotte-2013-JOURNAL.pdf](#) (Open Access)<http://www.plosone.org/article/Metrics/info/doi/10.1371/journal> (Open Access)

Scientific congresses and symposiums/Paper published in a journal

- Jeanmart, H., Duponcheel, M., Bricteux, L., Duquesne, T., Contino, F., & Dias, V. (2013). "Simulation of Wood Logs Combustion in a Stove at Peak Pyrolysis Conditions" [Paper presentation]. ECM, Lund, Sweden.
- DEBRABANDERE, F., TARTINVILLE, B., HIRSCH, C., & Coussement, G. (2013). "Extension of the Non-Linear Harmonic method to flow computations around moving and deforming structures" [Paper presentation]. International Forum on Aeroelasticity and Structural Dynamics, Bristol, United Kingdom.
- Bonvalet, L., Marijns, A., Debast, B., Parks, O., Gérard, G., Coussement, G., & Passelecq, C. (2013). "Validation of a geostatistical interpolation model using measurement of particulate matter concentration" [Paper presentation]. 15th International Conference on Harmonisation within Atmospheric, Madrid, Spain.
Full Text : [H15-82-LucieBonvalet.pdf](#) (Open Access)

2012

Scientific journals/Article

- DEBRABANDERE, F., TARTINVILLE, B., HIRSCH, C., & Coussement, G. (30 September 2012). Fluid-Structure Interaction Using a Modal Approach. "Journal of Turbomachinery, 134" (5), 21-26.
- Bricteux, L., Duponcheel, M., Winckelmans, G., Tiselj, I., & Bartosiewicz, Y. (01 May 2012). Direct and large eddy simulation of turbulent heat transfer at very low Prandtl number: Application to lead-bismuth flows. "Nuclear Engineering and Design, 246", 91-97.
- Simms, C. K., VanLoocke, M., & Lyons, C. G. (2012). Skeletal muscle in compression: Modeling approaches for the passive muscle bulk: Special issue: Active tissue modeling - From single muscle cells to muscular contraction. "International Journal for Multiscale Computational Engineering".

Scientific congresses and symposiums/Unpublished conference/Abstract

- Bonvalet, L., Marijns, A., Debast, B., Parks, O., Gérard, G., Coussement, G., & Passelecq, C. (11 December 2012). "Validation of a geostatistical interpolation model using measurement of particulate matter concentration" [Paper presentation]. 4th International Workshop on Air Quality Forecasting Research, WMO - Genève, Switzerland.
- Winckelmans, G., De Visscher, I., & Bricteux, L. (07 December 2012). "Aircraft wake two-vortex system at turbulent equilibrium" [Paper presentation]. Ercoftac belgium yearly seminar, Louvain-la-Neuve, Belgium.

Scientific congresses and symposiums/Paper published in a journal

- Gremmo, S., Carton de Wiart, C., Hillewaert, K., Winckelmans, G., Coussement, G., & Bricteux, L. (2012). "Implicit LES of turbulent flows with a high order discontinuous Galerkin method" [Paper presentation]. APS-DFD Annual meeting, San Diego, United States.
- Winckelmans, G., De Visscher, I., & Bricteux, L. (2012). "Aircraft wake two-vortex system at turbulent equilibrium" [Paper presentation]. APS-DFD Annual meeting, San Diego, United States.
- Bricteux, L., Duponcheel, M., Manconi, M., & Bartosiewicz, Y. (2012). "Numerical prediction of turbulent heat transfer at low Prandtl number" [Paper presentation]. Eurotherm 2012, Poitiers, France.
- Duponcheel, M., Manconi, M., Bricteux, L., Winckelmans, G., & Bartosiewicz, Y. (2012). "Assessment of different RANS approaches and near wall modeling strategies for the prediction of turbulent heat transfer in liquid metals: comparison with DNS and LES" [Paper presentation]. 20th international conference on nuclear engineering, Anaheim, United States - California.
- Carton de Wiart, C., Hillewaert, K., Geuzaine, P., Luccioni, R., Bricteux, L., Coussement, G., & Winckelmans, G. (2012). "Assessment of LES modeling within a high order Discontinuous Galerkin solver" [Paper presentation]. ETMM9: 9th International ERCOFTAC Symposium on Engineering Turbulence Modelling and Measurements, thessaloniki, Greece.
Full Text : [ETMM9_DE_WIART_N0095.pdf](#) (Open Access)

Learning materials/Course notes

- Coussement, G. (2012). "Computational Fluid Dynamics - Course notes: Course notes".
- Coussement, G. (2012). "Computational Fluid Dynamics - Laboratory and exercise notes".
- Coussement, G. (2012). "Mécanique des Fluides - Livre : Livre de cours".
- Coussement, G. (2012). "Précis de Mécanique des Fluides".
- Coussement, G. (2012). "Mécanique des Fluides - Notes de cours : Notes de cours".

- Coussement, G. (2012). "Mécanique des Fluides - Notes de laboratoire : Labo 2 et 3 : Notes de laboratoire : Labo 2 et 3".
- Coussement, G. (2012). "Techniques Numériques en Mécanique des Fluides - Notes de laboratoire et d'exercices : Notes de laboratoire et d'exercices".
- Coussement, G. (2012). "Mécanique des Fluides - Notes de laboratoire - Labo 1 : Notes de laboratoire - Labo 1".
- Coussement, G. (2012). "Aérodynamique Compressible et Incompressible".
- Coussement, G. (2012). "Techniques Numériques en Mécanique des Fluides - Notes de cours : Notes de cours".
- Coussement, G. (2012). "Mécanique des Fluides Appliquée et Industrielle".
- Coussement, G. (2012). "Recueil d'Exercices de Mécanique des Fluides".
- Coussement, G. (2012). "Turbomachines : Les fondements - Recueil d'exercices".
- Coussement, G. (2012). "Turbomachines : Les fondements - Livre".
- Coussement, G., & DEGREZ, G. (2012). "MECA-H-400 - Introduction à l'étude des écoulements biologiques - Partie 1".

2011

Scientific congresses and symposiums/Unpublished conference/Abstract

- De Visscher, I., Winckelmans, G., Lonfils, T., & Bricteux, L. (07 November 2011). "Recent improvement of operational wake vortex models: modeling of in-ground, atmospheric stratification and turbulence effects" [Paper presentation]. WakeNet3- Europe Specific Workshop: Operational Wake Vortex Models, Louvain-la-Neuve, Belgium.
- Chatelain, P., Bricteux, L., Backaert, S., Winckelmans, G., Stefan, K., & Koumoutsakos, P. (09 June 2011). "Vortex particle mesh methods with immersed lifting lines applied to the Large Eddy Simulation of wind turbine wakes" [Paper presentation]. Wake Conference, Gotland University, Sweden.

Scientific congresses and symposiums/Paper published in a journal

- DEBRABANDERE, F., TARTINVILLE, B., HIRSCH, C., & Coussement, G. (2011). "Fluid-Structure Interaction Using a Modal Approach" [Paper presentation]. ASME Turbo Expo 2011, Vancouver, Canada.

2010

Parts of books/Contribution to collective works

- Bricteux, L., Duponcheel, M., & Winckelmans, G. (2010). A new multiscale model with proper behaviour in both vortex flows and wall bounded flows. In "Direct and Large-Eddy Simulation VII". Editions Springer.

Scientific congresses and symposiums/Unpublished conference/Abstract

- Winckelmans, G., Bricteux, L., Duponcheel, M., De Visscher, I., & Lonfils, T. (07 July 2010). "Multiscale subgrid modeling and some applications to wake vortex flows and wall bounded flows" [Paper presentation]. ERCOFTAC Workshop on Direct and Large-Eddy Simulation 8, Eindhoven, Netherlands.

Scientific congresses and symposiums/Paper published in a journal

- Chatelain, P., Bricteux, L., Koumoutsakos, P., & Winckelmans, G. (2010). "Vortex methods with immersed lifting lines applied to LES of wind turbine wakes" [Paper presentation]. 63rd Annual Meeting of the APS Division of Fluid Dynamics, Long Beach, United States - California.

- Zouaoui Boudjeltia, K., Van Antwerpen, P., Chodzyski, K., & Coussement, G. (2010). "Modélisation de l'endothélium vasculaire" [Paper presentation]. VIème Symposium 'Lipides et athérosclérose', Mons, Unknown/unspecified.
- De Visscher, I., Winckelmans, G., Lonfils, T., Bricteux, L., Duponcheel, M., & Bourgeois, N. (2010). "The WAKE4D simulation platform for predicting aircraft wake vortex transport and decay: description and examples of application" [Paper presentation]. AIAA Atmospheric and Space Environments Conference, Toronto, Canada.
- Chodzyski, K., Zouaouia-Boudjeltia, K., Coussement, G., Lalemand, J., & Vanhaeverbeek, M. (2010). "An improved device to reproduce in the pulsatile coronary flow conditions measured in humans" [Paper presentation]. 78th EAS Congress, Hamburg, Germany.
- De Visscher, I., Bricteux, L., & Winckelmans, G. (2010). "LES OF AIRCRAFT WAKE VORTICES EVOLVING IN A STABLY STRATIFIED AND WEAKLY TURBULENT ATMOSPHERE" [Paper presentation]. Fifth European Conference on Computational Fluid Dynamics ECCOMAS CFD 2010, Lisbon, Portugal.
- Bricteux, L., Duponcheel, M., & Bartosiewicz, Y. (2010). "Direct and Large Eddy Simulation of Turbulent Heat Transfer at Very Low Prandtl Number: Application to Lead-bismuth Flows" [Paper presentation]. Nuclear Energy For New Europe, Portoroz, Slovenia.
- Marichal, Y., Bricteux, L., Duponcheel, M., Carton de Wiart, C., Winckelmans, G., & Geuzaine, P. (2010). "DES of the flow past a pair of cylinder in tandem configuration, Proceedings of the workshop on benchmark problems for airframe noise computations" [Paper presentation]. BANC-I workshop, AIAA-NASA, Stockholm, Sweden.
- Coussement, G. (2010). "Prototypage virtuel et systèmes d'équations aux dérivées partielles: une métamorphose technologique" [Paper presentation]. Journée des professeurs de mathématiques et de physique, Mons, Belgium.
- Coussement, G. (2010). "Energie éolienne: Potentiel aérodynamique" [Paper presentation]. Cycle Sciences, clés du futur, Mons, Belgium.

Learning materials/Course notes

- Wailliez, C. (2010). "Moteurs à combustion interne - Exercices".

2009

Parts of books/Contribution to collective works

- brousmiche, S., Bricteux, L., Winckelmans, G., Macq, B., & Piotr, S. (2009). Modeling of wake-vortex detection by a ground-based fiber LIDAR system. In "Advances in Geoscience and Remote Sensing". Intech.

Scientific journals/Article

- Dolfi, A., Canat, G., Valla, M., Augere, B., Besson, C., Goular, D., Lombard, L., Cariou, J., Durecu, A., Fleury, D., Bricteux, L., brousmiche, S., Lugan, S., & Macq, B. (01 December 2009). Pulsed 1.5-m LIDAR for Axial Aircraft Wake Vortex Detection Based on High-Brightness Large-Core Fiber Amplifier. "IEEE Journal on Selected Topics in Quantum Electronics, 15", 441-450.
- VanLoocke, M., Lyons, C. G., & Simms, C. K. (22 February 2009). Viscoelastic properties of passive skeletal muscle in compression-Cyclic behaviour. "Journal of Biomechanics, 42" (8), 1038-1048.
Full Text : [viscoelastic properties of passive skeletal muscle in compression_cyclic behaviour2009.pdf](#) (Open Access)

Scientific congresses and symposiums/Unpublished conference/Abstract

- Wailliez, C., & Coussement, G. (28 May 2009). "Experimental study of multilayer stent effects on haemodynamics in abdominal aortic aneurysm" [Paper presentation]. 8th National Congress on Theoretical and Applied Mechanics, Bruxelles, Belgium.

Scientific congresses and symposiums/Paper published in a journal

- Bricteux, L., Duponcheel, M., De Visscher, I., & Winckelmans, G. (2009). "Multiscale Models for Large Eddy Simulation of Aircraft Wake Vortices Under Various Atmospheric Conditions" [Paper presentation]. ASME International Mechanical Engineering Congress and Exposition, Floride, United States - Florida.
- De Visscher, I., Bricteux, L., Winckelmans, G., Caliaro, S., & Vilbajo, T. (2009). "Large eddy simulations of aircraft wake vortices in a stably stratified atmosphere" [Paper presentation]. Sixth International Symposium on Turbulence and Shear Flow Phenomena (TSFP-6), Seoul, South Korea.
- brousmiche, S., Bricteux, L., Piotr, S., Macq, B., Craeye, C., & Winckelmans, G. (2009). "Parameters Estimation of Wake Vortices in Ground Effect" [Paper presentation]. Coherent Laser Radar Conference, Toulouse, France.
- De Visscher, I., Bricteux, L., Winckelmans, G., Caliaro, S., & Vilbajo, T. (2009). "Large eddy simulations of aircraft wake vortices in a stably stratified atmosphere" [Paper presentation]. Sixth International Symposium on Turbulence and Shear Flow Phenomena (TSFP-6), Seoul, South Korea.

Scientific congresses and symposiums/Poster

- Wailliez, C. (17 March 2009). "Influence du placement d'un stent sur l'hémodynamique : étude expérimentale" [Poster presentation]. Matinée des chercheurs (MDC'2009), Mons, Belgium.

Learning materials/Course notes

- Wailliez, C. (2009). "Machines à fluides - Exercices".
- Coussement, G. (2009). "'Aérodynamique compressible et incompressible' - Vol 1: Dynamique des fluides compressibles - Vol 2: Dynamique des fluides incompressibles : Note de cours avec exercices - Vol 1 et Vol 2 - 3e Bachelier Ingénieur Civil, dominante Mécanique".
- Coussement, G. (2009). "Introduction à l'étude des écoulements biologiques - Notes de cours".
- Coussement, G. (2009). "Livre de mécanique des fluides et d'hydraulique : Version révisée - Edition 2009-2010 - Cours de 'Mécanique des fluides' (3e Bachelier Ingénieur Civil)".
- Coussement, G. (2009). "Recueil d'exercices de mécanique des fluides".
- Coussement, G. (2009). "Précis de mécanique des fluides".
- Coussement, G. (2009). "'Mécanique des fluides industrielle et appliquée' : Note de cours - Certificat des 4e Ingénieurs Civils mécaniciens".
- Coussement, G. (2009). "'Techniques numériques en mécanique des fluides' : Note de cours - Certificat des 5e Ingénieurs Civils mécaniciens".
- Coussement, G. (2009). "Introduction à l'étude des écoulements biologiques" - Master ULB en BioMécanique : Notes de cours - Partie 1".
- Coussement, G. (2009). "Mécanique des Fluides Appliquée et Industrielle - Notes de cours: 1ère Master - Finalité Spécialisée en Génie Energétique".
- Coussement, G. (2009). "'Techniques numériques en mécanique des fluides' : Notes de laboratoire et recueil d'exercices".
- Wailliez, C. (2009). "Machines à fluides, machines thermiques - Fondements - Exercices".
- Coussement, G. (2009). "Mécanique des fluides - Notes de cours".
- Coussement, G. (2009). "Mécanique des fluides - Livre du cours".

2008

Parts of books/Contribution to collective works

- VanLoocke, M. (2008). An engineering view on skeletal muscle behaviour. In "Perspectives on design and bioengineering. Essays in honour of C.G. Lyons" (pp. 69-91).
- Cogle, R., Bricteux, L., & Winckelmans, G. (2008). Spectral behavior of various subgrid-scale models in LES at very high Reynolds number. In "Free Preview Quality and Reliability of Large-Eddy Simulations". Editions Springer.

Scientific journals/Article

- Wailliez, C., & Coussement, G. (01 September 2008). CFD study of multilayer stent effects on haemodynamics in abdominal aortic aneurysms. "European Journal of Mechanical and Environmental Engineering, 2008-2", 9-14.
- VanLoocke, M., Lyons, C. G., & Simms, C. K. (06 February 2008). Viscoelastic properties of passive skeletal muscle in compression: Stress-relaxation behaviour and constitutive modelling. "Journal of Biomechanics, 41" (7), 1555-1566.

Full Text : [Viscoelastic properties of passive skeletal muscle in compression2008.pdf](#) (Open Access)

Scientific congresses and symposiums/Unpublished conference/Abstract

- Coussement, G. (26 August 2008). "L'aérodynamique dans le monde de l'éolien" [Paper presentation]. Congrès des Sciences 2008, Mons, Belgium.
- Georges, L., Bricteux, L., Duponcheel, M., Geuzaine, P., & Winckelmans, G. (28 May 2008). "LES of wake vortices in ground effect without and with wind, and also comparing different multiscale subgrid models" [Paper presentation]. International Workshop on Fundamental Issues Related to Aircraft Wakes (FAR-Wake Workshop), Marseille, France.
- Wailliez, C., & Coussement, G. (16 May 2008). "Influence sur l'hémodynamique du placement d'un stent multicouche dans un anévrisme de l'aorte abdominale" [Paper presentation]. Séminaires de Mécanique, Louvain-la-Neuve, Belgium.
- Chodzinski, K., Coussement, G., & Koltuniewicz, A. (06 May 2008). "Study and development of an in-vitro technology for testing vascular tissues submitted to physiological flow conditions" [Paper presentation]. Colloque Politechnika, Wroclawska, Poland.
- Wailliez, C. (26 April 2008). "Multilayer stent haemodynamic effects in abdominal aortic aneurysm" [Paper presentation]. Séminaires de mécanique, Trinity College Dublin, Ireland.

Scientific congresses and symposiums/Paper published in a journal

- Duponcheel, M., Bricteux, L., & Winckelmans, G. (2008). "Improving the near-wall behavior of multiscale models for LES" [Paper presentation]. 61st Annual Meeting of the Division of Fluid Dynamics, San Antonio, United States - Texas.
- Winckelmans, G., & Bricteux, L. (2008). "Modified law of the wall leading to turbulent channel flow universal velocity profiles valid down to $Re^+ = 395$ " [Paper presentation]. 61st Annual Meeting of the Division of Fluid Dynamics, San Antonio, United States - Texas.
- Louagie, T., Georges, L., Geuzaine, P., Bricteux, L., Duponcheel, M., Lonfils, T., & Winckelmans, G. (2008). "Numerical simulation of wake vortex flows: RANS-LES of a fuselage wake and LES of wake vortices in ground effect with and without wind" [Paper presentation]. 43rd conference on applied aerodynamics, Poitiers, France.

Scientific congresses and symposiums/Poster

- Wailliez, C. (26 February 2008). "Etude expérimentale de l'influence sur l'hémodynamique d'un stent multicouche placé dans un anévrisme de l'aorte abdominale" [Poster presentation]. Matinée des chercheurs (MDC) 2008, ULB, Unknown/unspecified.

Learning materials/Course notes

- Wailliez, C. (2008). "Actionneurs hydrauliques et pneumatiques - Exercices".

2007

Scientific congresses and symposiums/Paper published in a journal

- Bricteux, L., Cocle, R., Duponcheel, M., Georges, L., & Winckelmans, G. (2007). "Assessment of multiscale models for LES : spectral behaviour in very high Reynolds number turbulence and cases with aircraft wakes vortices" [Paper presentation]. Fifth International Symposium on Turbulence and Shear Flow Phenomena (TSFP-5), TUM, Garching, Germany.
- brousmiche, S., Bricteux, L., Piotr, S., Macq, B., & Winckelmans, G. (2007). "Numerical simulation of a heterodyne Doppler LIDAR for wind measurements in a turbulent atmospheric boundary layer" [Paper presentation]. IEEE International Geosciences And Remote Sensing Symposium (IGARSS 2007), Sensing and Understanding our Planet, Barcelona, Spain.
- Lugan, S., Bricteux, L., Macq, B., Piotr, S., & Winckelmans, G. (2007). "Simulation of LIDAR-based aircraft wake vortex detection using a bi-Gaussian spectral model" [Paper presentation]. IEEE International Geosciences And Remote Sensing Symposium (IGARSS 2007), Sensing and Understanding our Planet, Barcelona, Spain.

Scientific congresses and symposiums/Poster

- Wailliez, C. (13 March 2007). "Influence sur l'hémodynamique de la présence d'un stent multicouche dans un anévrisme aortique" [Poster presentation]. Matinée de Chercheurs de la Faculté Polytechnique de Mons, Mons, Belgium.

2006

Parts of books/Contribution to collective works

- Winckelmans, G., Georges, L., Bricteux, L., & Jeanmart, H. (2006). The Sampling-based dynamic procedure for LES without filtering: validation using finite differences. In "Free Preview Direct and Large-Eddy Simulation VI". Editions Springer.

Scientific congresses and symposiums/Paper published in a journal

- Winckelmans, G., Cocle, R., Dufresne, L., Capart, R., Bricteux, L., Daeninck, G., Lonfils, T., Duponcheel, M., Desenfans, O., & Georges, L. (2006). "Direct numerical simulation and large eddy simulation of wake vortices: going from laboratory conditions to flight conditions" [Paper presentation]. European Conference on Computational Fluid Dynamics (ECCOMAS), Egmond an zee, Netherlands.
- Wailliez, C., & Coussement, G. (2006). "CFD study of multilayer stent haemodynamics effects in abdominal aortic aneurysms" [Paper presentation]. NCTAM 2006 (mai), .
- Duponcheel, M., Lonfils, T., Bricteux, L., & Winckelmans, G. (2006). "Simulation of three-dimensional wake vortices in ground effect using a fourth order incompressible code" [Paper presentation]. 7th National Congress on theoretical and applied Mechanics (NCTAM 2006), Mons, Belgium.

2005

Scientific congresses and symposiums/Paper published in a journal

- Winckelmans, G., Dufresne, L., & Bricteux, L. (2005). "LES investigation of aircraft wake two-vortex system in low level atmospheric turbulence" [Paper presentation]. 58th Annual Meeting of the Division of Fluid Dynamics, Chicago, United States - Illinois.

Scientific congresses and symposiums/Poster

- Wailliez, C. (09 March 2005). "Etude de l'influence de stents sur l'hémodynamique" [Poster presentation]. Matinée des chercheurs (MDC'2005), Mons, Belgium.

Learning materials/Course notes

- Coussement, G. (2005). "Détermination expérimentale des caractéristiques d'un profil sustentateur par mesure de la distribution de pression" : Notes de laboratoires - Cours de 'Aérodynamique compressible et incompressible' - 3e Bachelier Ingénieur Civil, dominante Mécanique".

2004

Scientific congresses and symposiums/Paper published in a journal

- Winckelmans, G., Georges, L., Bricteux, L., & Jeanmart, H. (2004). "Sampling-based dynamic procedure for LES in physical space" [Paper presentation]. 57th Annual Meeting of the Division of Fluid Dynamics, Seattle, United States - Washington.

2003

Scientific journals/Article

- Tournour, M., Rossion, J.-P., Bricteux, L., Mc Culloch, C., & Mc Gann, I. (2003). Accelerating FEM and BEM acoustic solutions. "WIT: Transactions on the Built Environment". doi:10.2495/AC030341
Full Text : [AC03034FU.pdf](#) (Open Access)

1988

Dissertations and theses/Master's dissertation

- Coussement, G. (1988). "Modélisation numérique des écoulements potentiels autour d'obstacles par une méthode des singularités" [Master's dissertation, Université de Mons]. ORBi UMONS-University of Mons.
<https://orbi.umons.ac.be/handle/20.500.12907/37437>

In Press

Scientific journals/Article

- Corso, P., Gremmo, S., Coussement, G., & Chodzyski, K. (In press). Experimental and Numerical Flow Investigation inside an Intracranial Aneurysm with and without Flow-Diverter Stent. "Journal of Biomedical Engineering and Biosciences".