jorisdegroote

There is always a way.

Research activities

September 2020–present **Numerical simulation of fluid-structure interaction**, *Ghent University*, Faculty of Engineering and Architecture.
Full Professor

October 2014–August 2020 **Numerical simulation of fluid-structure interaction**, *Ghent University*, Faculty of Engineering and Architecture.
Associate Professor

February 2013–September 2014 **Numerical simulation of fluid-structure interaction**, *Ghent University*, Faculty of Engineering and Architecture.
10% Associate Professor and 90% postdoctoral fellow of the Research Foundation - Flanders (FWO)

October 2010–January 2013 **Partitioned simulation of fluid-structure interaction and other coupled problems**, *Ghent University*, Faculty of Engineering and Architecture (Prof. Jan Vierendeels).
Postdoctoral fellow of the Research Foundation - Flanders (FWO)

June 2010–September 2010 **Efficient analysis of fluid-structure interaction problems in structural dynamics**, *Ghent University*, Faculty of Engineering and Architecture (Prof. Jan Vierendeels).
Project of the Research Foundation - Flanders (FWO)

October 2006–May 2010 **Development of Algorithms for the Partitioned Simulation of Strongly Coupled Fluid-Structure Interaction Problems**, *Ghent University*, Faculty of Engineering and Architecture (Prof. Jan Vierendeels).
Ph. D. fellow of the Research Foundation - Flanders (FWO)

September 2006 **Numerical study of bubble detachment**, *Ghent University*, Faculty of Engineering and Architecture.

Foreign research stays

July 2011–September 2011 **Gradient-based optimization for parameter identification studies with partitioned fluid-structure interaction simulations**, *Technical University of Munich*, Chair of Structural Analysis, Department of Engineering and Geodesy (Prof. Kai-Uwe Bletzinger).
Grant for a long stay abroad of the Research Foundation - Flanders (FWO)

July 2008–August 2008 **Comparison of monolithic and partitioned fluid-structure interaction**, *Massachusetts Institute of Technology*, Finite Element Research Group, Department of Mechanical Engineering (Prof. Klaus-Jürgen Bathe).
Grant for a long stay abroad of the Research Foundation - Flanders (FWO)

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September 2007–June 2008 **Adaptation of Reduced-Order Models**, *Massachusetts Institute of Technology*, Aerospace Computational Design Laboratory, Department of Aeronautics and Astronautics (Prof. Karen Willcox).
Grant for a long stay abroad of the Research Foundation - Flanders (FWO)

Education

October 2006–April 2010 **Ph.D. in Electromechanical Engineering**, *Ghent University*, Faculty of Engineering and Architecture, Development of Algorithms for the Partitioned Simulation of Strongly Coupled Fluid-Structure Interaction Problems.

October 2004–June 2006 **Master of Science in Electromechanical Engineering**, *Ghent University*.
summa cum laude

October 2001–June 2004 **Bachelor of Science in Electromechanical Engineering**, *Ghent University*.
summa cum laude

September 1995–June 2001 **Latin-Mathematics**, *Sint-Aloysiuscollege, Ninove*.
summa cum laude

Teaching experience

September 2020 **Lecturer**, *Fluid-Structure Interaction for Industrial Applications (partim)*, von Karman Institute for Fluid Dynamics.
Overview and computational techniques

October 2018–present **Lecturer**, *Cross-Course Project*, Ghent University, Belgium.
See course description.

October 2018–present **Lecturer**, *Fluid Mechanics*, Ghent University, Belgium.
Theory *See course description*.

October 2014–present **Lecturer**, *Numerical Optimisation*, Ghent University, Belgium.
Theory *See course description*.

October 2014–present **Lecturer**, *Computational Fluid Dynamics*, Ghent University, Belgium.
Theory *See course description*.

October 2014–present **Lecturer**, *Turbomachines*, Ghent University, Belgium.
Theory *See course description*.

October 2013–September 2018 **Lecturer**, *Doctoral Course on Mathematical Techniques for Engineering Science*, Ghent University, Belgium.
Theory and exercises

October 2011–September 2017 **Lecturer**, *Fluid-structure interaction*, Ghent University, Belgium.
Theory and exercises

October 2011–September 2014 **Guest lecturer**, *Advanced Multi-physics Modeling for Medical Applications*, Ghent University, Belgium.
Theory

December 2008, August 2011 **Lecturer**, *JMBC Burgers course on Fluid-structure interaction (partim)*, Delft University of Technology, The Netherlands.
Theory and exercises

October 2006–September 2014 **Teaching Assistant**, *Fluid Mechanics*, Ghent University, Belgium, Prof. Jan Vierendeels.
Exercises, laboratory work and CFD-project *See course description*.

Ph.D. students

November 2020–present **Real-time optimization of bio-inspired wings using the deformable overset method and machine learning**, *Romain Poletti*, Supervisor.

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September 2020–present	**Development of techniques to simulate the interaction between airjets and a flexible, fuzzy yarn**, *Axel Bral*, Supervisor.
June 2020–present	**Optimization of flexible aircraft models for airborne wind energy**, *Niels Pynaert*, Supervisor.
October 2019–present	**Fluid-structure interaction simulation of elasto-hydrodynamic lubrication**, *Nicolas Delaissé*, Supervisor.
September 2019–present	**Fluid-structure interaction simulations of cardiovascular problems**, *Amith Balusubramanya*, Supervisor.
September 2019–present	**Aeroelasticity of large wind turbines using LES**, *François Trigaux*, Advisor.
September 2019–present	**Fluid-structure interaction simulation of cerebrospinal fluid**, *Sarah Vandenbulcke*, Advisor.
June 2019–present	**Fluid-structure interaction simulation of wire drawing processes**, *Mathieu Vervaecke*, Supervisor.
December 2018–present	**Numerical modelling of dynamic beach profiles for very shallow foreshores**, *Ine Vandebeek*, Advisor.
January 2018–present	**Computational analysis of fluid-structure interaction in wind engineering**, *Navaneeth Kodunthirappully Narayanan*, Supervisor.
October 2018–present	**Fluid-structure interaction simulations of cardiovascular problems**, *Matthias Van Impe*, Supervisor.
October 2017–present	**Analytical study of multi-secant quasi-Newton methods for optimization problems**, *Nicolas Boutet*, Supervisor.
October 2017–present	**Fluid-structure interaction simulations and uncertainty quantification of flow-induced vibration in tube bundles**, *Henri Dolfen*, Supervisor.
September 2015–present	**Fluid-structure interaction simulations of heart valves**, *Federico Canè*, Supervisor.
October 2017–February 2021	**Development of reduced order modeling methods for incompressible flows with heat transfer and parametric boundary conditions**, *Kelbij Star*, Supervisor.
October 2016–October 2020	**Efficient quasi-Newton methods for steady free surface flow**, *Toon Demeester*, Supervisor.
September 2016–September 2020	**Development of numerical modelling techniques for air-jet weft insertion**, *Lucas Delcour*, Supervisor.
September 2016–September 2020	**Computational analysis of two-phase flow-induced vibration in heat exchanger and piping geometries**, *Laurent De Moerloose*, Supervisor.
September 2015–September 2020	**Wind-structure interactions of tensile surface structures: evaluating the wind load distributions over and the steady aero-elastic responses of hyperbolic paraboloid roofs and canopies**, *Jimmy Colliers*, Supervisor.
September 2015–February 2020	**Development and application of surrogate-assisted optimization under uncertainty strategies for unmanned aerial vehicles**, *Jolan Wauters*, Supervisor.
September 2014–November 2019	**Fluid-structure interaction simulations of wind turbines with composite blades**, *Gilberto Santo*, Supervisor.
October 2012–October 2018	**Efficient methods for automated conversion of wind turbine blade designs into high-fidelity finite element modelling with shell and solid elements**, *Mathijs Peeters*, Supervisor.
February 2014–September 2017	**Splicing and weaving of yarns with air jets**, *Akil Osman*, Supervisor.

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September 2012–December 2016 **Integrating valve leaflet motion into patient-specific numerical blood flow simulations of the human heart: strategies and challenges**, *Alessandra Bavo*, Supervisor.

February 2012–June 2016 **Computational analysis of a twin screw expander for small scale ORC systems**, *Iva Papes*, Supervisor.

October 2011–September 2015 **Computational analysis of flow-induced vibrations in fuel rod bundles of next generation nuclear reactors**, *Jeroen De Ridder*, Supervisor.

October 2010–September 2014 **Numerical modelling of the fluid-structure interaction in complex vascular geometries**, *Joris Bols*, Advisor.

October 2010–September 2014 **Fluid-structure interaction simulation of (repaired) aortic coarctation**, *Liesbeth Taelman*, Advisor.

October 2009–September 2013 **Wind-structure interaction simulations of ovalling vibrations in silo groups**, *Jeroen Hillewaere*, Advisor.

December 2007–November 2012 **Fluid-structure modeling in the feto-placental circulation: On the umbilical vein and ductus venosus bifurcation**, *Paul Roger Leinan*, Supervisor.

Master students

October 2020–present **Fluid-structure interactions of a wire-wrapped tube array using Chimera/overset grids**, *Dieter Van Hauwermeiren*, Supervisor.

October 2020–present **Analysis and optimization of flexible planes with high wing span**, *Thomas Laureijs*, Supervisor.

October 2019–June 2020 **Numerical investigation of the flow field around a tube bundle subjected to two-phase cross-flow**, *Axel Bral*, Supervisor.

October 2019–June 2020 **Influence of uncertain geometry on flow-induced vibrations using computational fluid dynamics**, *Basile Lievens*, Supervisor.

October 2019–June 2020 **Parametric study of the dynamic stability characteristics of a UAV using surrogate modeling**, *Pieter-Jan Degroote*, Supervisor.

October 2018–September 2019 **Analysis and design of a radial fan discharging directly in the atmosphere**, *Wout Verbiest*, Supervisor.

October 2018–June 2019 **Fluid-structure interaction simulation of a catamaran**, *Alec Bagué*, Supervisor.

October 2018–June 2019 **Optimization of the control surfaces of an unmanned aerial vehicle**, *Cedric Bouckaert and Ruben Demeersseman*, Supervisor.

October 2018–June 2019 **Investigation into the use of multiple main nozzle inlets on air-jet weaving looms**, *Nicolas Delaissé*, Supervisor.

October 2018–June 2019 **Design and optimization of an endless pool**, *Victor Mommerency*, Supervisor.

October 2017–September 2018 **Optimization of technology for deployment of inflatable river weirs with steel gate**, *Jeroen Casters*, Supervisor.

October 2017–September 2018 **Analysis of the dynamics of a culvert valve for navigation lock levelling**, *Ares De Groote*, Supervisor.

October 2017–June 2018 **Analysis of blade loading due to wake effects in wind turbine farms**, *Simon Allosserie and Matthias Debyser*, Supervisor.

October 2017–June 2018 **Multi-Objective Optimization of an Unmanned Aerial Vehicle, Using Surrogate Modelling and Game Theory**, *Renaud Boury and Nathan De Mazière*, Supervisor.

October 2017–June 2018 **Robust design of an Unmanned Aerial Vehicle**, *Vince Browaeys*, Supervisor.

October 2017–June 2018 **Design and optimisation of a compact torque converter**, *Simon Holvoet*, Supervisor.

October 2017–June 2018 **Investigation of the vibrations of a vertical tube subjected to internal two-phase flow**, *Alexander Meire*, Supervisor.

October 2017–June 2018 **Study of cross flow fan behaviour in a combine**, *Jasper Taets*, Supervisor.

October 2017–June 2018 **Analysis of the wind loading on a large scale conveyor belt**, *Dries Van Cauteren*, Supervisor.

October 2017–June 2018 **Comparison and validation of numerical models for large-scale vortices in an array of cylinders**, *Bart Verzelen*, Supervisor.

October 2016–June 2017 **Optimization of a hydraulic torque converter's efficiency**, *Cedric Buffel and Arne Degrande*, Supervisor.

October 2016–June 2017 **Simulation model for the temperature behaviour in a train brake**, *Kwinten De Rijck*, Supervisor.

October 2016–June 2017 **Optimization of the Winglets of an Unmanned Aerial Vehicle**, *Christof Defrancq*, Supervisor.

October 2016–June 2017 **Uncertainty Quantification of an Unmanned Aerial Vehicle**, *Henri Dolfen*, Supervisor.

October 2016–September 2017 **Multi Fidelity Optimization of the Stall Characteristics of an Unmanned Aerial Vehicle**, *Jelle Meyers*, Supervisor.

October 2016–June 2017 **Analysis of the forces acting on the shaft of a large dredge pump**, *Katrijn Van Lierde*, Supervisor.

October 2016–September 2017 **Development of an accurate and fast model for the design of hydraulic torque converters**, *Nicola Zwaenepoel*, Supervisor.

October 2015–June 2016 **Optimisation of the impeller in a milk cooling tank**, *Pieter Boone*, Supervisor.

October 2015–June 2016 **Numerical investigation of periodic large-scale vortex-induced vibrations in an array of cylinders in axial flow**, *Laurent De Moerloose*, Supervisor.

October 2015–June 2016 **Optimization of the stall characteristics of an unmanned aerial vehicle**, *Lucas Delcour*, Supervisor.

October 2015–June 2016 **Optimization of the stall characteristics of an unmanned aerial vehicle**, *Toon Demeester*, Supervisor.

October 2015–June 2016 **Dynamic fluid loading of an open impeller in a centrifugal pump**, *Cedric Devriese*, Supervisor.

October 2015–June 2016 **Analysis of a pump-turbine for an energy storing island**, *Kobe Mertens and Pieter Schacht*, Supervisor.

October 2015–June 2016 **Study and optimization of the air flow in a channel**, *Arjan Missinne*, Supervisor.

October 2015–June 2016 **Optimization of the landing of an unmanned aerial vehicle**, *Xavier van Heule*, Supervisor.

October 2015–June 2016 **Optimisation of a human-powered aircraft using fluid-structure interaction simulations**, *Bob Vanderhoydonck*, Supervisor.

October 2015–June 2016 **Aerodynamic optimisation of spokes of bike wheels**, *Arnout Wittevrongel*, Supervisor.

October 2014–June 2015 **CFD analysis of a screw expander using real gas models**, *Lazhar Abdelli*, Supervisor.

October 2014–June 2015 **Assessment of the force spectrum induced by turbulence on an array of cylinders in incompressible axial flow**, *Pieter Aerts*, Supervisor.

October 2014–June 2015 **Modelling of an electromagnetically controlled valve in a compressible flow**, *Thomas Bonami*, Supervisor.

October 2013–June 2014 **Numerical analysis and design of main nozzles for air weaving machines**, *Ine Hertens*, Supervisor.

October 2013–January 2015 **Study of the dynamic fluid load on an open impeller in a centrifugal pump**, *Martijn Deprez*, Supervisor.

October 2013–June 2014 **Development of a CFD simulation methodology for the modification of an axial turbine in a turbocharger**, *Thibault De Jaeger*, Supervisor.

October 2013–June 2014 **CFD modelling of a wind concentrator for increased yield of small wind turbines in low wind areas**, *Maxim Luyckx and Toon Van Obbergen*, Supervisor.

October 2013–June 2014 **Study of wake effects in wind turbine parks**, *David Schillebeeckx*, Supervisor.

October 2012–June 2013 **Aeroelastic study of wind turbine blades**, *Sergei Maertens*, Supervisor.

February 2012–August 2012 **Evaluation of an auxiliary feedwater system at the Doel 4 nuclear power plant**, *Jan De Jonge*, Supervisor.

October 2011–January 2013 **Numerical simulation of the flow around wind turbine blades**, *Koen Van der Biest*, Counsellor.

October 2011–August 2012 **Simulation of the fluid-structure interaction of the lead-bismuth cooling fluid with the beam tube of the MYRRHA reactor**, *Michiel Van Damme*, Supervisor.

October 2011–June 2012 **Optimisation of air curtains for shielding refrigerated rooms**, *Anke Asselman*, Supervisor.

October 2010–June 2011 **Simulation and optimization of the fluid-structure interaction in an axial membrane pump**, *Jan Alexander*, Supervisor.

October 2009–June 2010 **Simulation of fluid-structure interaction in a membrane pump**, *Joris Bols and Liesbeth Taelman*, Counsellor, awarded with the Atlas Copco Airpower prize.

October 2009–June 2010 **Simulation and optimization of a piezofan**, *Brecht Debrouwere*, Counsellor.

October 2008–June 2009 **Aeroelastic study of the oscillations of a silo**, *Bert Van Quekelberghe*, Counsellor.

October 2007–June 2008 **Numerical simulation of fluid-structure interaction on hydrodynamic impact**, *Koen Stoop and Steve Vermeulen*, Counsellor.

October 2006–June 2007 **Study of the interaction between the flow and flexible inhibitors in solid rocket boosters**, *Stefaan Techel*, Counsellor.

Grants

November 2020–October 2024 **Ph. D. fellowship of the Special Research Fund of Ghent University**, *Development of techniques to simulate the interaction between air jets and a flexible, fuzzy yarn*, Axel Bral.

November 2020–October 2024 **Ph. D. fellowship strategic basic research of the Research Foundation - Flanders (FWO)**, *Real-time optimization of bio-inspired wings using the deformable overset method and machine learning*, Romain Poletti.

September 2019–August 2023 **Strategic basic research project of the Research Foundation - Flanders (FWO)**, *Computational Modelling of Thermo-Elastohydrodynamic Lubricated Contacts (ContactLub)*, Co-applicant with Dieter Fauconnier.

July 2019–June 2023 **Research and development project of Flanders Innovation & Entrepreneurship (VLAIO)**, *Virtual drawing and bunching (ViDB)*, Co-applicant with Bekaert.

October 2017–September 2020 **Research and development project of Flanders Innovation & Entrepreneurship (VLAIO)**, *Towards eco-efficient weaving by exploring flow fields (ECOFLOW)*, Co-applicant with Jan Vierendeels.

October 2017–September 2021 **Ph. D. fellowship of the Belgian Nuclear Research Centre**, *Development of Reduced Order CFD models for the application of Uncertainty Quantification*, Kelbij Star.

October 2016–September 2020 **Ph. D. fellowship of the Research Foundation - Flanders (FWO)**, *Reducing flow-induced vibration in steam generators and heat exchangers using two-phase fluid-structure interaction simulations*, Laurent De Moerloose.

October 2016–September 2020 **Ph. D. fellowship of the Special Research Fund of Ghent University**, *Simulation of the dynamic behavior of a weft thread in an air-jet weaving loom*, Lucas Delcour.

January 2016–December 2019 **Starting grant of the Special Research Fund of Ghent University**, *Improving efficiency and safety of devices with flow along cylinders using fluid-structure interactions simulations (ESFLOC)*.

April 2015–March 2019 **EU Horizon 2020 Research and Innovation Action**, *Thermal hydraulics Simulations and Experiments for the Safety Assessment of MEtal cooled reactors (SESAME)*, Co-applicant.

April 2015–March 2019 **EU Horizon 2020 Research and Innovation Action**, *MYRRHA Research and Transmutation Endeavour (MYRTE)*, Co-applicant.

February 2015–January 2019 **Strategic basic research project of Agency for Innovation by Science and Technology (IWT)**, *Efficient uncertainty quantification for optimization in robust design of industrial applications (EUFORIA)*, Co-applicant.

January 2014–December 2018 **Research project of the Research Foundation - Flanders (FWO)**, *Fluid-structure interaction simulations of wind turbines with composite blades*, Applicant with Wim Van Paepegem.

January 2013–December 2015 **Research and development project of Agency for Innovation by Science and Technology (IWT)**, *Optimized design for weaving machine main nozzles (ODMN)*, Co-applicant with Jan Vierendeels.

February 2012–January 2016 **Strategic basic research project of Agency for Innovation by Science and Technology (IWT)**, *Next generation of organic Rankine cycles (ORCNext)*, Co-applicant with Jan Vierendeels.

January 2012–December 2016 **Research project of the Research Foundation - Flanders (FWO)**, *Fundamental numerical and experimental study of flame spread over surfaces in case of fire*, Co-applicant with Bart Merci.

October 2011–September 2015 **Ph. D. fellowship of the Research Foundation - Flanders (FWO)**, *Computational analysis of flow-induced vibrations in fuel rod bundles of next generation nuclear reactors*, Jeroen De Ridder.

July 2011–September 2011 **Grant for a long stay abroad of the Research Foundation - Flanders (FWO)**, *Gradient-based optimization for parameter identification studies with partitioned fluid-structure interaction simulations*, Joris Degroote.

October 2010–September 2014 **Post-doc fellowship of the Research Foundation - Flanders (FWO)**, *Partitioned simulation of fluid-structure interaction and other coupled problems*, Joris Degroote.

September 2007–June 2008 **Grant for a long stay abroad of the Research Foundation - Flanders (FWO)**, *Adaptation of Reduced-Order Models*, Joris Degroote.

October 2006–May 2010 **Ph. D. fellowship of the Research Foundation - Flanders (FWO)**, *Development of Algorithms for the Partitioned Simulation of Strongly Coupled Fluid-Structure Interaction Problems*, Joris Degroote.

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Honours

February 2021 **Best paper award**, *9th International Conference on System Modeling and Optimization, Budapest, Hungary*, New approach for secant update generalized version of PSB, Nicolas Boutet, Rob Haelterman, Joris Degroote.

August 2020 **Honorable Mention**, *2020 Mandles Prize for Hydrofoil Excellence*, Dynamic Stability Analysis of a Hydrofoiling Craft Using Computational Fluid Dynamics, Alec Bagué, Toon Demeester, Joris Degroote, Evert Lataire.

October 2019 **Best poster award**, *44th Woudschoten Conference of Dutch-Flemish Scientific Computing Society, Zeist, the Netherlands*, Boundary control of finite volume-based POD-Galerkin reduced order models for buoyancy-driven flows, Kelbij Star, Giovanni Stabile, Sokratia Georgaka, Francesco Belloni, Gianluigi Rozza, Joris Degroote.

March 2017 **Best paper award**, *International Multiconference of Engineers and Computer Scientists, Hong Kong*, Coupling of Partitioned Physics Codes with Quasi-Newton Methods, Rob Haelterman, Alfred Bogaers, Joris Degroote, Silviu Cracana.

October 2012 **Best poster award**, *37th Woudschoten Conference, Zeist, the Netherlands*.

April 2012 **Quadrennial award "Prof. D. De Meulemeester-Piot"**, *A.I.G.*, Award for a Ph.D. thesis in engineering with possible applications in textile technology.

April 2011 **Finalist for the 2010 ECCOMAS Ph.D. Award**, *European Community on Computational Methods in Applied Sciences*, BNCM Best Ph.D. Thesis Award.

December 2010 **Biennial award "Andreas De Leenheer" for Beta sciences**, *International Club of Flanders*.

July 2006 **Sidmar prize**, *Sidmar N.V.*, Master thesis *Numerical study of bubble and droplet dynamics with partitioned solvers* at the Faculty of Engineering of the Ghent University.

July 2006 **Boulvin-Van Engelen prize**, *A.I.G.*, Award for the engineering student with the highest academic achievement over the entire engineering program at the Ghent University.

Articles in journals listed in the ISI Web of Science (a1)

J. Wauters and J. Degroote. Parametric study of a wing fence on a UAV using surrogate modeling. *Journal of Aircraft*, pages 1–33, 2021. DOI: , In press.

K. Star, G. Stabile, F. Belloni, G. Rozza, and J. Degroote. A novel iterative penalty method to enforce boundary conditions in finite volume POD-Galerkin reduced order models for fluid dynamics problems. *Communications in Computational Physics*, 30(1):34–66, 2021. DOI: 10.4208/cicp.OA-2020-0059.

K. Star, B. Sanderse, G. Stabile, G. Rozza, and J. Degroote. Reduced order models for the incompressible Navier-Stokes equations on collocated grids using a 'discretize-then-project' approach. *International Journal for Numerical Methods in Fluids*, pages 1–29, 2021. DOI: 10.1002/fld.4994.

T. Demeester, E.H. van Brummelen, and J. Degroote. An efficient quasi-Newton method for three-dimensional steady free surface flow. *International Journal for Numerical Methods in Fluids*, pages 1–30, 2021. DOI: 10.1002/fld.4989.

J. Wauters and J. Degroote. ESLA: a new surrogate-assisted single-loop reliability-based design optimization technique. *Structural and Multidisciplinary Optimization*, pages 1–19, 2021. DOI: 10.1007/s00158-020-02808-9.

K. Star, G. Spina, F. Belloni, and J. Degroote. Development of a coupling between a system thermal-hydraulic code and a reduced order CFD model. *Annals of Nuclear Energy*, 153(105056):1–16, 2021. DOI: 10.1016/j.anucene.2020.108056.

N. Boutet, R. Haelterman, and J. Degroote. Secant update generalized version of PSB: a new approach. *Computational Optimization and Applications*, pages 1–21, 2021. DOI: 10.1007/s10589-020-00256-1, In press.

N.K. Narayanan, R. Wüchner, and J. Degroote. Monolithic and partitioned approaches to determine static deformation of membrane structures due to ponding. *Computers & Structures*, 244(106419):1–22, 2021. DOI: 10.1016/j.compstruc.2020.106419.

K. Star, G. Stabile, G. Rozza, and J. Degroote. A POD-Galerkin reduced roder model of a turbulent convective buoyant flow of sodium over a backward-facing step. *Applied Mathematical Modelling*, 89(1):486–503, 2021. DOI: 10.1016/j.apm.2020.07.029.

L. Delcour, L. Van Langenhove, and J. Degroote. Towards simulation of force and velocity fluctuations due to turbulence in the relay nozzle jet of an air jet loom. *Textile Research Journal*, pages 1–40, 2020. DOI: 10.1177/0040517520968285, In press.

T. Demeester, E.H. van Brummelen, and J. Degroote. An efficient quasi-Newton method for two-dimensional steady free surface flow. *International Journal for Numerical Methods in Fluids*, 92(7):785–801, 2020. DOI: 10.1002/fld.4806.

G. Santo, M. Peeters, W. Van Paepegem, and J. Degroote. Effect of rotor-tower interaction, tilt angle and yaw misalignment on the aeroelasticity of a large horizontal axis wind turbine with composite blades. *Wind Energy*, 23(7):1578–1595, 2020. DOI: 10.1002/we.2501.

J. Wauters and J. Degroote. Development of an adaptive infill criterion for constrained multi-objective asynchronous surrogate-based optimization. *Journal of Global Optimization*, pages 1–21, 2020. DOI: 10.1007/s10898-020-00903-1.

J. Colliers, J. Degroote, M. Mollaert, and L. De Laet. Mean pressure coefficient distributions over hyperbolic paraboloid roof and canopy structures with different shape parameters in a uniform flow with very small turbulence. *Engineering Structures*, 205(110043):1–21, 2020. DOI: 10.1016/j.engstruct.2019.110043.

L. De Moerloose and J. Degroote. A study of the vibration of a horizontal u-bend subjected to an internal upwards flowing air-water mixture. *Journal of Fluids and Structures*, 93(102883):1–28, 2020. DOI: 10.1016/j.jfluidstructs.2020.102883.

G. Santo, M. Peeters, W. Van Paepegem, and J. Degroote. Fluid-structure interaction simulations of a wind gust impacting on the blades of a large horizontal axis wind turbine. *Energies*, 13(509):1–20, 2020. DOI: 10.3390/en13030509.

N. Boutet, R. Haelterman, and J. Degroote. Secant update version of quasi-Newton PSB with reighted multisecant equations. *Computational Optimization and Applications*, 75(2):441–466, 2020. DOI: 10.1007/s10589-019-00164-z.

F. Bertocchi, M. Rohde, D. De Santis, A. Shams, H. Dolfen, J. Degroote, and J. Vierendeels. Fluid-structure interactions of a 7-rods bundle: benchmarking numerical simulations with experimental data. *Nuclear Engineering and Design*, 356(110394):1–12, 2020. DOI: 10.1016/j.nucengdes.2019.110394.

J. Wauters, I. Couckuyt, N. Knudde, T. Dhaene, and J. Degroote. Multi-objective optimization of a wing fence on an unmanned aerial vehicle using surrogate-derived gradients. *Structural and Multidisciplinary Optimization*, 61(1):353–364, 2020. DOI: 10.1007/s00158-019-02364-x.

H. Dolfen, F. Bertocchi, M. Rohde, and J. Degroote. Vibrations in a 7-rod bundle subject to axial flow: simulations and experiments. *Nuclear Engineering and Design*, 353(110227):1–12, 2019. DOI: 10.1016/j.nucengdes.2019.110227.

F. Canè, M. Selmi, G. De Santis, A. Redaelli, P. Segers, and J. Degroote. Mixed impact of torsion on LV hemodynamics: a CFD study based on the chimera technique. *Computers in Biology and Medicine*, 112(103363):1–12, 2019. DOI: 10.1016/j.compbiomed.2019.103363.

L. Delcour, J. Peeters, and J. Degroote. Three-dimensional fluid-structure interaction simulations of a yarn subjected to the main nozzle flow of an air-jet weaving loom using a Chimera technique. *Textile Research Journal*, 90(2):194–212, 2020. DOI: 10.1177/0040517519862884.

J. Wauters, J. Degroote, and J. Vierendeels. Comparative study of transitional turbulence models for the prediction of high angle of attack and hysteresis behavior. *American Institute of Aeronautics and Astronautics Journal*, 57(6):1–16, 2019. DOI: 10.2514/1.J057249.

K. Star, F. Belloni, G. Van den Eynde, and J. Degroote. POD-identification reduced order model of linear transport equations for control purposes. *International Journal for Numerical Methods in Fluids*, 90(8):375–388, 2019. DOI: 10.1002/fld.4724.

G. Santo, M. Peeters, W. Van Paepegem, and J. Degroote. Dynamic load and stress analysis of a large horizontal axis wind turbine using full scale fluid-structure interaction simulation. *Renewable Energy*, 140:212–226, 2019. DOI: 10.1016/j.renene.2019.03.053.

G. Santo, M. Peeters, W. Van Paepegem, and J. Degroote. Numerical investigation of the effect of tower dam and rotor misalignment on performance and loads of a large wind turbine in the atmospheric boundary layer. *Energies*, 12(7):1208, 2019. DOI: 10.3390/en12071208.

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