Curriculum Vitae (CVI)

Application file for ULB open professorship, N° COA 29 09 2025

Miguel A. Mendez

Personal Details

Family name:	Mendez
First name:	Miguel Alfonso
Date and place of birth:	31/10/1987, Maracay (Venezuela)
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ResearchGate:	RG Profile

Current Position

- **Associate Professor**, von Karman Institute for Fluid Dynamics (VKI), Environmental & Applied Fluid Dynamics Department, Sint-Genesius-Rode, Belgium (May 2023–present).
- **Honorary Lecturer (interim appointment)**, Aero-Thermo-Mechanics Laboratory, École Polytechnique de Bruxelles, Université Libre de Bruxelles, Brussels, Belgium (February 2024–present)
- **Profesor Honorifico**, Experimental Aerodynamics and Propulsion Lab, Universidad Carlos III de Madrid, Leganés, Spain (February 2025–present).

Education

- **PhD in Engineering**, Université libre de Bruxelles (2013–2018). Thesis: *Dynamics of Gas Jet Impinging on Falling Liquid Films*. Supervisor: Jean Marie Buchlin (VKI).
- **Research Master in Experimental Fluid Mechanics**, von Karman Institute (2012–2013). Graduated with honours; von Karman Prize.
- **MSc in Energy and Nuclear Engineering**, University of Florence (2009–2012). GPA 110/110 *cum laude*.
- **Erasmus**, ETSI Sevilla (2010–2011). GPA 8.9/10.
- **BSc in Mechanical Engineering**, University of L'Aquila (2006–2009). GPA 107/110.

Previous Positions

- **Assistant Professor**, VKI, Environmental & Applied Fluid Dynamics Department (2019–2023).
- **Postdoctoral Researcher**, VKI, Environmental & Applied Fluid Dynamics Department (2018–2019).

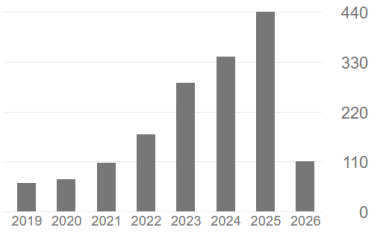
Awards & Distinctions

Emerging Leader 2022, by *Measurement Science and Technology*. **Outstanding Paper 2020**, by *Measurement Science and Technology*. **Solvay PhD Thesis Award** for Research Excellence (2019). **AFVL PhD Thesis Award** for laser diagnostics in fluid mechanics, by AFVL. **Best Oral Presentation at the Annual VKI PhD Symposium 2015-2016. Best Oral Presentation at the 10th Experimental Fluid Mechanics Conference 2015 Theodore von Karman Prize** (best performance at the VKI Research Master program)

Research Output and Funding

- **Research Output & Impact** ≈70 journal papers, 90+ conferences, 10 chapters in books; 2 edited books. The evolution of citations from Google Scholar is shown on the right. RG score: 2,929 Research Interest on Research Gate (top 3%); Google scholar h-index: 23; i10-index: 38.
- **Funding (last 5 years):** ∼3.1 M€ as PI (including 1.5 M€ for an ERC Starting Grant) and ∼3.4 M€ as collaborator on specific project work packages (see 6_PIN document).

	All	Since 2021
Citations	1680	1465
h-index	23	22
i10-index	38	37



Teaching (A.Y. 2025/2026)

(with starting year of each teaching activity)

- Fundamentals of Fluid Dynamics (22 h, 2.5 ECTS), VKI. *Started in 2017 as DEFM, adapted in 2019*
- Signal Processing, Module II (12 h, 1.5 ECTS), VKI. *Started in 2019*
- Introduction to Measurement Techniques (25% of the course), VKI. *Started in 2017*
- Tools for Scientific Computing (12 h, 1 ECTS), VKI *Started in 2022*
- Data-Driven Modal Analysis (12 h, 1 ECTS), VKI *Started in 2022*
- Machine Learning for Fluid Dynamics, Module I (12 h, 1 ECTS) at VKI. *Started as Data Driven Fluid Mechanics (DDFM) in 2021, adapted in 2025.*
- Machine Learning for Fluid Dynamics, Module II (24 h, 2 ECTS), VKI. *Started as DDFM since 2021, adapted in 2025.*
- Digital Twinning, Data Assimilation and Control (18 h, 2 ECTS), VKI. *Started in 2024.*
- Hands-on Machine Learning for Fluid Dynamics (32 h, 3 ECTS), VKI. *Started in 2021.*
- *Data-Driven Engineering (MECAH419)* (10 h), ULB. *Started in 2022*

Service to the Profession and Society

- Reviewer for: *Data-Centric Engineering*, *Journal of Fluid Mechanics*, *Physics of Fluids*, *Experimental Thermal and Fluid Science*, *Review of Scientific Instruments*, *Chemical Engineering Science*, *International Journal of Multiphase Flows*, *Industrial & Engineering Chemistry Research*, *Journal of Coatings Technology and Research*, *European Journal of Operational Research.*
- Organizer/director and main lecturer: *Hands-on Machine Learning for Fluid Dynamics* 2021-2026 (yearly), >650 participants so far.
- Co-organizer/director: VKI Lecture Series on PIV/LPT (2021, 2024); *Introduction to Measurement Techniques* (2020); *Data Driven Fluid Mechanics* LS (2020, >230 participants; lecture notes published by Cambridge University Press), *Machine Learning for Fluid Dynamics* LS (2024, >300 participants; lecture notes published by von Karman Institute) ; *Flow Control LS* (2026)
- Scientific Committee member: *European Coating Symposium*, *AI Fluids.*

Supervision and PhD Committee Service

- I currently supervise 11 PhD students (8 as PI and 3 in international co-supervision), with five defenses completed in 2023–2024. As illustrated in Table 1, I have deliberately steered new PhD recruitments and research directions toward ULB, so that the majority of my doctoral activity is already established within the university. This ensures a smooth transition to a permanent position at ULB.
- Visiting PhDs (2023-2025): L. Kyriakidis, (DLR), T. Werner (TU Darmstadt), D. Gligor (UPM), I. Tirelli (UC3M), E. Saccaggi (Polito), J.Wang (Monash Univ), D. Grasev (UoD), M. Belda (Cz. Techn Univ)
- I currently supervise 4 Research Master students at VKI (26 supervised in the last 5 years). 100+ MSc theses/internships supervised (full list in 6_PES).
- Member of 8 PhD Commitees: Kamila Zdybal (ULB), Mushin Akkurt (VKI-UGhent), Sagar Adatreo (TU-DELFT), Antonio Colanera (UniNapoli), Hang Wang (ULB), Michele Quattromini (Univ Paris Saclay), Ivan Kharsansky (Ensta PariS), Enrico Amico (PoliTO)

Outreach and Engagement

- **Public outreach:** Contributor to the VKI Open Days, presenting fluid-dynamics demonstrations and research activities to the general public.
- **Science communication:** Featured in a popular podcast on 'Engineering & PhD Life,' discussing fluid-dynamics research, PhD training, and career perspectives (link), and in a recorded panel organized by NCP-FNRS to share feedback and strategic advice for prospective European-grant applicants (ERC, Horizon Europe) (link).
- **Open-source software and training:** Developer of the open-source tools MODULO (MODal mUltiscale pOd, see github) for modal decomposition and data-driven reduced-order modelling and SPICY (meshlesS Pressure from Image veloCimetrY, see github) for physics-constrained radial-basis-function regression for scattered data. Both tools are accompanied by public tutorials and instructional videos for the research community (see MODULO on youtube, see SPICY on youtube).

International and National Scientific Links

Besides my strong ties with UCM3 (**Universidad Carlos III de Madrid**) through my joint position and close interactions with S. Discetti and A. Ianiro, I maintain active collaborations with several international groups via student mobility, seminars, PhD committees, and joint proposals. These include close links with: A. Gosset and M. Lema (**Universidade da Coruña, UDC**); G. Cafiero, J. Serpieri, F. Avallone, G. Di Cicca and S. Pieraccini (**Politecnico di Torino**); A. Sciacchitano, F. Scarano, A. Koa, and C. Falsetti (**Delft University of Technology, TU Delft**); M. Manolesos and K. Giannakoglou (**National Technical University of Athens, NTUA**); F. Sanfedino and A. F. Urbano (**ISAE–SUPAERO**); P. Salgado, L. González, and S. Le Clainche (**Universidad Politécnica de Madrid, UPM**); Josip Basic (**University of Split**); O. Semeraro (**CNRS–LISN**); J. Hnidka (**University of Defence**); S. Brunton (**University of Washington**); B. Noack (**Shenzhen University**), T. Pagliaroli (**UNICUSANO**), R. Camussi (**UNIROMA3**), L. Magri (**Imperial College London**); L. Pastur (**ENSTA Paris**); P. Cinnella (**Sorbonne University**); M. Bähr, S. Görtz, and P. Bekemeyer (**German Aerospace Center, DLR**); B. McKeon (**Stanford University**); P. Jordan (**Institut P', CNRS–Université de Poitiers**); O. San (**University of Tennessee**); and B. Dias (**NASA Ames Research Center**), among others. In Belgium, my closest links are with E. Garone, B. Scheid and A. Parente (**ULB**); Y. Bartosiewicz (**UCLouvain**); J. Degroote (**Ghent University**); J. Helsen (**VUB**); D. Seveno and R. Vetrano (**KU Leuven**); and J. Steelant (**KU Leuven / ESA**), complemented by broader interactions with other colleagues nationwide. I aim to further expand this network through my position at ULB.

Name	University	Co-supervisor	Funding	Year	2023	2024	2025	2026	2027	2028	Impact
Domenico Fiorini	KULeuven	D. Seveno	FWO/ESA	Defended							-
Fabio Pino	ULB	B. Scheid	FRIA/AM	Defended							-
Matilde Fiore	UCLouvain	Y. Bartosiewicz	FRIA/SCK	Defended							-
David Barreiro	UCoruna	A. Gosset	UCoruna/AM	Defended							-
Romain Poletti	UGhent	J. Degroote	FWO	Defended							-
Pedro Marques	ULB	B. Scheid	FRIA/ESA	Finishing							none
Jan van Den Berghe	UCLouvain	Y. Bartosiewicz	FRIA	Finishing							none
Lorenzo Schena	VUB	J.Helsen	FWO	4rth							low
Manuel Ratz	ULB	A. Parente	FRIA/ERC	3rd							medium
Damien Rigutto	ULB	B. Scheid	FRIA/AM	3rd							high
Umberto Zucchelli	ISAE	F. Sanfedino	ESA	3rd							medium
Francisco Monteiro	UC3M	–	VLAIO/ERC	2nd							high
Samuel Ahizi	UC3M	–	VLAIO/ERC	2nd							high
Sebastiano Randino	ULB	E. Garone	FRIA/ERC	2nd							high
David Grasev	UoD	J. Hnidka	ERC/UoD	2nd							medium
Tommaso De Maria	ULB	E. Garone	ERC	1st							high
Yannick Lecompte	ULB	E. Garone	ERC	1st							high

Table 1: Summary of PhD students and project timeline (gray = active years; light blue = current academic year). The final column indicates the expected impact of my transition from VKI to ULB. A detailed transition plan for all ongoing PhD projects has been prepared and can be discussed with the Scientific Committee during the interview stage. The team also includes three postdoctoral researchers: R. Poletti, D. Barreiro, and A. Grava.

Selected Invited Lectures, Seminars and Keynotes (2022–2025)

1. **Lectures at the EA2 "Advanced Post Processing Techniques Summer School": AI in Fluid Dynamics — Meshless Modal Analysis of Scattered Data**, invited by Prof. Avallone, event page, Torino, July 2025.
2. **Lectures at UC3M Doctoral School** "An Introduction to Statistical and Variational Methods for Assimilation and Real Time Modeling", invited by Prof. S. Discetti, Madrid, Jun 2025, link.
3. **Keynote Lecture on Reinforcement Twinning at the 1st AI and Fluid Mechanics Conference**, invited by Prof. Gavaises, programme, Chania, May 2025.
4. **Seminar on Machine Learning for Fluid Dynamics at BrIAS**, invited by Prof. E. Garone, video, Brussels, February 2025.
5. **Seminar on Reinforcement Twinning at the WP3 Cypher Meeting**, invited by Prof. A. Parente, event page, Madrid, February 2025.
6. **Seminar on Meshless and Binless Super-resolution for PTV**, Exp in Fluids Seminar, invited by Prof. Tropea, video, Online, November 2024.
7. **Seminar on Engineering AI at the workshop "Bridging Knowledge: Artificial Intelligence"**, organized by ASI, invited by Dr. A. Turchi, agenda, Rome, May 2024.
8. **Seminar on "Trends and Challenges in Scientific Machine Learning for Engineering"**, invited by Dr. Esposito, ASI Online Seminar Series, event page, March 2024.
9. **Keynote Lecture on Reinforcement Twinning at the 1st Cypher General Meeting**, invited by Prof. A. Parente, meeting page, Ljubljana, April 2024.
10. **Keynote Lecture on Machine Learning for Fluid Dynamics at the 12th AIAC**, invited by Prof. Özgen, METU, Ankara, September 2023, conference site.
11. **Lecture on Machine Learning for Fluids at the Short Course on CFD of ICCS**, invited by Dr. Shane, London, September 2023, course programme.
12. **Three Lectures on Deep Learning for Turbulence Modeling at the FJOH Summer School**, invited by Prof. R. Stieglitz, Karlsruhe, August 2023, school page, video.
13. **Seminar at Extrality: "Trends and Challenges in Scientific Machine Learning for Fluid Dynamics"**, invited by Dr. Mazari, Online, September 2023, event link.
14. **Seminar on Machine Learning for Engineering at IMT Nord Europe**, invited by Prof. Lacassagne, Douai, June 2023.
15. **Five Lectures on Data-Driven Modal Analysis at CAMS–AUB**, invited by Prof. Najem, Beirut, February 2023, programme, video.
16. **Lecture at JT51 on Data Processing**, invited by Prof. Zimmer, Paris, November 2022, event page.
17. **Seminar at City, University of London: "Data-Driven Fluid Mechanics"**, invited by Prof. Marinos Manoles, London, October 2022, event page.
18. **Seminar at KTH: "Comparative Analysis of Machine Learning Methods for Active Flow Control"**, invited by Prof. R. Vinuesa, Stockholm, September 2022, event page.
19. **Seminar at Universidade da Coruña (UDC) on Machine Learning for Fluid Dynamics**, invited by Prof. Gosset, Ferrol, September 2022, event page.
20. **Keynote Lecture on Data-Driven Methods for Image Velocimetry at the CFTL 2022 Meeting**, invited by Prof. Vetrano, Leuven, September 2022, meeting page.
21. **Lecture on Model-Free Control Methods at the Workshop on Complex Fluids, Centro Enrico Fermi**, invited by Prof. Biferale, Rome, July 2022, programme.

List of Publications

Under Review

[1] D. Barreiro-Villaverde, A. Cantiani, and M. A. Mendez. "On the complex interplay of temperature, phase change and natural convection in self-pressurization-an investigation using segregated modeling". Submitted to International Journal of Heat and Mass Transfer. 2025. arXiv: 2512.13349.

[2] D. Rigutto, M. Ratz, and M. A. Mendez. "A meshless data-tailored approach to compute statistics from scattered data with adaptive radial basis functions". Submitted to Experiments in Fluids. 2025. arXiv: 2511.20449.

[3] F. Monteiro, T. De Maria, S. Ahizi, R. Abarca, G. C. A. Caridi, and M. A. Mendez. "Regime maps for sloshing in horizontal cylindrical tanks under vertical acceleration". Submitted to Physical Review Fluids. 2025. arXiv: 2512.02540.

[4] P. A. Marques, A. Simonini, B. Scheid, and M. A. Mendez. "Sloshing-induced pressure drop in cryogenic propellant tanks: an experimental analysis with flow visualization". Submitted to International Journal of Heat and Mass Transfer. 2025.

[5] M. Ratz, A. Parente, and M. A. Mendez. "Meshless data-driven decompositions with RBF-based inner products". Submitted to Computers and Fluids. 2025. arXiv: 2511.03264.

[6] S. Ahizi, F. Monteiro, R. Abarca, and M. A. Mendez. "Heat-transfer enhancement by parametric sloshing in horizontal cylinders: experiments and EKF-based identification of Nusselt numbers". Submitted to International Journal of Heat and Mass Transfer. 2025. arXiv: 2510.19540.

[7] J. Van den Berghe, M. A. Mendez, and Y. Bartosiewicz. "On the choking mechanism in supersonic ejectors: a one-dimensional analysis of Reynolds-averaged Navier–Stokes simulations". Submitted to Journal of Fluid Mechanics. 2025. arXiv: 2510.23385.

[8] S. Randino, L. Schena, N. Coudou, E. Garone, and M. A. Mendez. "Nonlinear system identification for model-based control of waked wind turbines". Submitted to Data-Centric Engineering. 2025. arXiv: 2510.07336.

[9] R. Poletti, E. Bombardi, L. Koloszar, M. A. Mendez, and J. Degroote. "Characterisation and extension of a rigid-body dynamics solver coupled with OpenFOAM for flight performance analysis of flapping-wing drones". Submitted to OpenFOAM Journal. 2025. arXiv: 2510.24518.

[10] A. K. N. Doan, K. Bizon, P. Cinnella, M. A. Mendez, and A. Parente. "Hybrid physics-based machine learning methods for renewable sustainable fuels modelling". Roadmap article submitted to Journal of Physics: Energy (IOP). 2025.

[11] F. Pino, E. Fracchia, B. Scheid, and M. A. Mendez. "Integral modelling and reinforcement-learning control of 3D liquid metal coating on a moving substrate". Submitted to Physical Review Fluids. 2025. arXiv: 2503.14270.

[12] R. Poletti, L. Schena, L. Koloszar, J. Degroote, and M. A. Mendez. "Reinforcement Twinning for hybrid control of flapping-wing drones". Submitted to Data-Centric Engineering. 2025. arXiv: 2505.18201.

Journal Articles Published

[13] Lorenzo Schena, Wim Munters, Jan Helsen, and Miguel A. Mendez. "POD-Based Sparse Stochastic Estimation of Dynamic Wind Turbine Blade Deflections". In: *Journal of Sound and Vibration* (Mar. 2026), p. 119738. ISSN: 0022-460X. DOI: 10.1016/j.jsv.2026.119738.

[14] Iacopo Tirelli, Miguel Alfonso Mendez, Andrea Ianiro, and Stefano Discetti. "Meshless super-resolution of scattered data via constrained radial basis functions and K-nearest-neighbors-driven densification". In: *Physical Review Fluids* 11.2 (Feb. 2026). ISSN: 2469-990X. DOI: 10.1103/nvlc-1cmn.

[15] P. A. Marques, S. Ahizi, F. Monteiro, B. Scheid, and M. A. Mendez. "On the scaling of heat and mass transfer in cryogenic propellant tanks: A model-based and experimental analysis under static conditions and lateral sloshing". In: *Applied Thermal Engineering* 279 (2025). DOI: 10.1016/j.applthermaleng.2025.127751.

[16] L. Kyriakidis, M. Bähr, and M. A. Mendez. "Enhanced hybrid algorithm based on Bayesian optimization and Interior Point OPTimizer for constrained optimization". In: *Optimization and Engineering* (2025). DOI: 10.1007/s11081-025-09975-y.

[17] I. Tirelli, M. A. Mendez, A. Ianiro, and S. Discetti. "A meshless method to compute the proper orthogonal decomposition and its variants from scattered data". In: *Proceedings of the Royal Society A* (2025). DOI: 10.1098/rspa.2024.0526. arXiv: 2407.03173.

[18] M. Fiore, E. Saccaggi, L. Koloszar, Y. Bartosiewicz, and M. A. Mendez. "Data-driven turbulent heat flux modeling with inputs of multiple fidelity". In: *Physical Review Fluids* 10.3 (2025), p. 034606. DOI: 10.1103/PhysRevFluids.10.034606. arXiv: 2409.03395.

[19] F. Monteiro, P. Marques, A. Simonini, L. Carbonelle, and M. A. Mendez. "Experimental characterization of non-isothermal sloshing in microgravity". In: *Experimental Thermal and Fluid Science* 166 (2025), p. 111476. DOI: 10.1016/j.expthermflusci.2025.111473. arXiv: 2410.06590.

[20] F. Pino, M. A. Mendez, and B. Scheid. "Pareto front of the magnetic wiping process in dip coating". In: *Journal of Engineering Mathematics* (2025). Issue 1/2025. DOI: 10.1007/s10665-025-10426-x. arXiv: 2406.14110.

[21] J. Van den Berghe, M. A. Mendez, and Y. Bartosiewicz. "An extension of the compound flow theory with friction between the streams and at the wall". In: *Journal of Fluid Mechanics* 1000 (2024), A85. DOI: 10.1017/jfm.2024.1041. arXiv: 2401.07236.

[22] F. Pino, M. A. Mendez, and B. Scheid. "Linear stability analysis of a vertical liquid film over a moving substrate". In: *Journal of Fluid Mechanics* 1000 (2024), A57. DOI: 10.1017/jfm.2024.940.

[23] D. Barreiro-Villaverde, A. Gosset, and M. A. Mendez. "On the coupling instability of a gas jet impinging on a liquid film". In: *Journal of Fluid Mechanics* 992 (2024), A11. DOI: 10.1017/jfm.2024.553. arXiv: 2309.15502.

[24] F. Pino, M. A. Mendez, and B. Scheid. "Absolute and convective instabilities in a liquid film over a substrate moving against gravity". In: *Physical Review Fluids* 9 (2024), p. 104002. DOI: 10.1103/PhysRevFluids.9.104002. arXiv: 2312.14613.

[25] L. Kyriakidis, M. A. Mendez, and M. Bahr. "A hybrid algorithm based on Bayesian Optimization and Interior Point OPTimizer for optimal operation of energy conversion systems". In: *Energy* 312 (2024), p. 133416. DOI: 10.1016/j.energy.2024.133416.

[26] D. Gligor, P. A. Marques, P. S. Sanchez, J. Porter, M. A. Mendez, and J. M. Ezquerro. "Experiments on sloshing mitigation using tuned oscillating baffles". In: *Physics of Fluids* 36 (2024), p. 092122. DOI: 10.1063/5.0225917.

[27] D. Fiorini, A. Simonini, J. Steelant, D. Seveno, and M. A. Mendez. "An experimental characterization of capillary driven flows in microgravity". In: *Microgravity Science and Technology* 36 (2024), p. 61. DOI: 10.1007/s12217-024-10142-8.

[28] R. Poletti, L. Schena, D. Ninni, and M. A. Mendez. "MODULO: a python toolbox for data-driven modal decomposition". In: *Journal of Open Source Software* 9.102 (2024), p. 6753. DOI: 10.21105/joss.06753.

[29] R. Poletti, A. Calado, L. Koloszar, J. Degroote, and M. A. Mendez. "On the unsteady aerodynamics of flapping wings under dynamic hovering kinematics". In: *Physics of Fluids* 36 (2024), p. 081901. DOI: 10.1063/5.0215531. arXiv: 2408.03222.

[30] M. Ratz and M. A. Mendez. "A meshless and binless approach to compute statistics in 3D ensemble PTV". In: *Experiments in Fluids* 65 (2024), p. 142. DOI: 10.1007/s00348-024-03878-x. arXiv: 2403.11828.

[31] L. Schena, P. Marques, R. Poletti, S. Ahizi, J. Van den Berghe, and M. A. Mendez. "Reinforcement Twinning: from digital twins to model-based reinforcement learning". In: *Journal of Computational Science* 82 (2024), p. 102421. DOI: 10.1016/j.jocs.2024.102421. arXiv: 2311.03628.

[32] P. Marques, S. Ahizi, and M. A. Mendez. "Real-time data assimilation for the thermodynamic modelling of cryogenic storage tanks". In: *Energy* 302 (2024), p. 131739. DOI: 10.1016/j.energy.2024.131739. arXiv: 2310.11399.

[33] D. Gligor, C. Peromingo, P. Salgado Sanchez, J. Porter, and M. A. Mendez. "Sloshing mitigation in microgravity with moving baffles". In: *Acta Astronautica* 219 (2024), pp. 639–652. DOI: 10.1016/j.actaastro.2024.03.047.

[34] P. Sperotto, M. Ratz, and M. A. Mendez. "SPICY: a Python toolbox for meshless assimilation from image velocimetry using radial basis functions". In: *Journal of Open Source Software* 9.93 (2024), p. 5749. DOI: 10.21105/joss.05749.

[35] D. Fiorini, A. Simonini, J. Steelant, D. Seveno, and M. A. Mendez. "Dynamic wetting experiments with nitrogen in a quasi-capillary tube". In: *Physical Review Fluids* 8 (2023), p. 124004. DOI: 10.1103/PhysRevFluids.8.124004. arXiv: 2310.05490.

[36] D. Barreiro-Villaverde, A. Gosset, and M. A. Mendez. "Damping of three-dimensional waves on coating films dragged by moving substrates". In: *Physics of Fluids* 35 (2023), p. 072110. DOI: 10.1063/5.0154144. arXiv: 2305.16139.

[37] T. Ivanova, F. Pino, B. Scheid, and M. A. Mendez. "Evolution of waves in liquid films on moving substrates". In: *Physics of Fluids* 35 (2023), p. 013609. DOI: 10.1063/5.0132222. arXiv: 2203.08201.

[38] D. Fiorini, L. Carbonelle, A. Simonini, J. Steelant, D. Seveno, and M. A. Mendez. "Characterization of a capillary-driven flow in microgravity by means of optical techniques". In: *Multiphase Science and Technology* 35.3 (2023), pp. 55–66. DOI: 10.1615/MultScienTechn.2023047919.

[39] P. Marques, A. Simonini, L. Peveroni, and M. A. Mendez. "Experimental analysis of heat and mass transfer in non-isothermal sloshing using a model-based inverse method". In: *Applied Thermal Engineering* (2023), p. 120871. DOI: 10.1016/j.applthermaleng.2023.120871. arXiv: 2212.12246.

[40] A. Calado, R. Poletti, L. K. Koloszar, and M. A. Mendez. "A robust data-driven model for flapping aerodynamics under different hovering kinematics". In: *Physics of Fluids* 35 (2023), p. 047122. DOI: 10.1063/5.0139020. arXiv: 2212.09464.

[41] F. Pino, L. Schena, J. Rabault, and M. A. Mendez. "Comparative analysis of machine learning methods for active flow control". In: *Journal of Fluid Mechanics* 958 (2023), A39. DOI: 10.1017/jfm.2023.76. arXiv: 2202.11664.

[42] L. Gkimisis, B. R. Barros Dias, J. B. Scoggins, T. Magin, M. A. Mendez, and A. Turchi. "Data-driven modeling of stagnation-line flow with heat and mass transfer in hypersonic reentry". In: *AIAA Journal* 61.8 (2023), pp. 3269–3286. DOI: 10.2514/1.J062332. arXiv: 2208.06240.

[43] F. J. Mendez, M. A. Mendez, N. Sciarra, and A. Pasculli. "Multiobjective analysis of the Sand Hypoplasticity model calibration". In: *Acta Geotechnica* (2024). DOI: 10.1007/s11440-023-02191-x. arXiv: 2303.07234.

[44] J. Van den Berghe, B. R. Barros Dias, Y. Bartosiewicz, and M. A. Mendez. "A 1D model for the unsteady gas dynamics of ejectors". In: *Energy* (2022). DOI: 10.1016/j.energy.2022.126551. arXiv: 2208.07687.

[45] M. A. Mendez. "Linear and nonlinear dimensionality reduction from fluid mechanics to machine learning". In: *Measurement Science and Technology* 34.4 (2023). DOI: 10.1088/1361-6501/acaffe. arXiv: 2208.07746.

[46] A. Procaci, M. M. Kamal, M. A. Mendez, S. Hochgreb, A. Coussement, and A. Parente. "Multi-scale proper orthogonal decomposition analysis of instabilities in swirled and stratified flames". In: *Physics of Fluids* 32 (2020), p. 123103. DOI: 10.1063/5.0127956.

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