Dr. Artem Korobenko
Associate Professor, Associate Head for Research, Schulich Research Chair
Department of Mechanical and Manufacturing Engineering, University of Calgary
Co-Director, University of Calgary Aerospace Network (UCAN): www.ucalgary.ca/aerospace
President, Canadian Association for Computational Science and Engineering (CACSE)
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Dr. Artem Korobenko is a leading expert in computational science and engineering, with internationally recognized contributions in renewable energy systems and high-speed aerospace technologies. His research focuses on the development of advanced numerical methods, particularly variational multiscale finite element formulations, for multiscale, multiphysics simulations involving complex fluid-structure interaction, turbulence, and thermo-chemical nonequilibrium. Dr. Korobenko's work has led to transformative advancements in the modeling and optimization of wind and hydrokinetic turbines, enabling significant efficiency improvements and supporting clean energy deployment in remote and Indigenous communities across Canada. In aerospace, his high-fidelity frameworks for compressible flow are shaping the design of next-generation UAVs, hypersonic vehicles, and re-entry systems. Dr. Korobenko's research outputs are not only of theoretical importance but also of strategic relevance to energy security, climate goals, and defense capabilities.

Academic Experience

2021 – present	University of Calgary, Calgary, Alberta, Canada Associate Professor and Associate Head for Research, Department of Mechanical and Manufacturing Engineering
2021 – present	University of Calgary, Calgary, Alberta, Canada Co-founder and Director of Aerospace Engineering Minor, Schulich School of Engineering
2021 – present	University of Calgary, Calgary, Alberta, Canada Co-Founder and Co-Director of the University of Calgary Aerospace Network
2016 – 2021	University of Calgary, Calgary, Alberta, Canada Assistant Professor, Department of Mechanical and Manufacturing Engineering
2015 – 2016	University of California, San Diego, La Jolla, CA, USA Postdoctoral Researcher, Structural Engineering Department

Education

2011 - 2014	University of California, San Diego, La Jolla, CA, USA Ph.D., Structural Engineering Department/Computational Science, Mathematics and Engineering Program (CSME)
2009 – 2011	Clemson University, Clemson, SC, USA M.Sc., Mechanical Engineering Department
2004 - 2009	National Aerospace University “Kharkov Aviation Institute”, Kharkov, Ukraine B.Eng., Department of Aircraft Engines, Graduation with honors

Selected Awards

2025	Schulich School of Engineering Graduate Supervision Excellence Award
2024	J. Tinsley Oden Faculty Fellowship for Visiting Researchers
2024	Schulich Research Chair

2024	Nominee for IACM John Argyris Award for Young Scientists
2022-2023	Alexander von Humboldt Research Fellowship for Experienced Researchers
2021, 2020	Schulich School of Engineering Faculty Fellowship (x2)
2020	Schulich School of Engineering Departmental Research Excellence Award
2019, 2017	Schulich School of Engineering Research Achievement Award (x2)
2018	Schulich School of Engineering Teaching Achievement Award
2018	Teaching Excellence Award from Engineering Student Society
2016	Nominee for 2016 UCSD Chancellor's Postdoctoral Scholar Award
2015	Nominee for 2015 UCSD Chancellor's Dissertation Medal
2009 - 2011	Fulbright Graduate Student Fellowship

Professional Service

Member of: American Institute of Aeronautics and Astronautics (AIAA), Canadian Aeronautics and Space Institute (CASI), Engineering Mechanics Institute (EMI), US Association for Computational Mechanics (USACM), International Association for Computational Mechanics (IACM), American Society of Mechanical Engineers (ASME), Canadian Association for Computational Science and Engineering (CACSE)

2025 - present	President of the Canadian Association for Computational Science and Engineering
2024 - 2027	Member of the International Energy Agency (IEA) Wind Technology Collaboration Program, Task 57: Joint Assessment of Models
2024 - 2025	National membership lead for Canada in the International Energy Agency (IEA) Wind Technology Collaboration Program, Task 57: Joint Assessment of Models
2023 - 2024	Vice President of the Canadian Association for Computational Science and Engineering
2021 - 2022	Co-founder and Treasurer of the Canadian Association for Computational Science and Engineering
2021 - present	Scientific Review Committee Member for Resource Allocation Competition from Digital Research Alliance of Canada
2020 - 2025	Member-at-Large of TTA on CFD and FSI, US Association for Computational Mechanics
2016-2020	Vice-chair (until 2018) and Chair for Committee on Fluid-Structure Interaction (CFSI) of the Applied Mechanics Division (AMD) of ASME
2016-2025	Member of Computational Mechanics TC at EMI
2012-present	Scientific expert for Fulbright Graduate Student Program

Journal Referee

Editor for Special Issue in Eng. with Computers, Intl. J. of Num. Methods for Heat and Fluid Flow, Ocean Engineering, J. of Fluids and Structures, Appl. Sciences, ASME J. of Appl. Mech., Computational Mech., Computer Methods in Appl. Mech. and Eng., Computers & Fluids, Energies, Experimental Techniques, Math. Models and Methods in Appl. Science, Wind Energy, J. of Wind Engineering & Industrial Aerodynamics, Computers & Math. with Applications, J. of Computational Science, Mech. Research Communications, AIAA Journal, J. of Computational Physics

External Reviewer

NSERC Alliance Grant, NSERC Discovery Grant, Compute Canada Resource Allocation Competitions, France-Canada Research Funds, Research Grant Council of Hong-Kong, Mitacs Accelerate, Army Research Office (ARO) Mathematical Sciences Division, National Science Centre of Poland, Czech Science Foundation, Ministry of Science and Technology Chile, Dutch Research Council.

Supervision and Mentorship

Trainee Type	Supervised	Co-Supervised	Graduated
PhD Students	6	4	4
MSc Students	11	5	9
Postdoctoral Fellows	1	1	2
Undergraduate Researchers	52	-	-

Selected National and International Awards received by trainees

Gold Medal from the Canadian Society for Mechanical Engineering

Rising Stars in Computational & Data Sciences Award (UT Austin)

NSERC Postgraduate Scholarships-Doctoral (PGS-D)

NSERC Canada Graduate Scholarship for Masters students (CGS-M)

Award for International HPC Summer School on HPC Challenges in Computational Sciences.

CFD Society of Canada Graduate Scholarship

Research Funding

Funding Source	Total Amount	Role
Natural Science and Engineering Research Council	$7,199,400	PI/co-PI
Alberta Innovates	$715,000	PI
Digital Research Alliance of Canada	$642,110	PI
Canadian Foundation for Innovation	$262,685	PI
Government of Alberta	$16,082,031	co-I
Mitacs	$165,000	co-PI
University of Calgary	$126,832	PI
Total (All Sources)	**$25.1M+**	

28.	Alberta Innovates Advance Program: Stream II	*Under review*	$300,000	PI
27.	Alberta Innovates Advance Program: Stream I	*Under review*	$40,000	PI
26.	Digital Research Alliance of Canada, Resources for Research Groups (RRG)	2025-2026	$145,510	PI
25.	Alberta Innovates CASBE Program	2024-2026	$100,000	PI
24.	NSERC Alliance Grant	2024-2027	$225,000	PI

23.	NSERC Alliance International Catalyst Grant	2024-2025	$25,000	PI
22.	VPR Catalyst Grant	2024-2025	$12,000	PI
21.	2024 NSERC Discovery Grant	2024-2029	$195,000	PI
20.	Digital Research Alliance of Canada, Resources for Research Groups (RRG)	2024-2025	$79,431	PI
19.	Alberta Major Innovation Fund (MIF) on Space and Defence Technologies	2023-2028	$16,082,031	co-I
18.	Digital Research Alliance of Canada, Resources for Research Groups (RRG)	2023-2024	$92,432	PI
17.	CFI John R. Evans Leaders Funds	2022-2027	$262,685	PI
16.	Compute Canada, Resources for Research Groups (RRG)	2022-2023	$123,130	PI
15.	Compute Canada, Resources for Research Groups (RRG)	2021-2022	$30,092	PI
14.	NSERC Alliance Grant	2020-2025	$1,400,000	PI
13.	Alberta Innovates CASBE Stream II	2020-2022	$250,000	PI
12.	Mitacs Accelerate	2020-2023	$165,000	co-PI
11.	Compute Canada, Resources for Research Groups (RRG)	2020-2021	$20,026	PI
10.	NSERC Alliance COVID-19 Grant	2020-2021	$36,000	PI
9.	University of Calgary Faculty Seed Grant	2020-2021	$14,832	PI
8.	Compute Canada, Resources for Research Groups (RRG)	2019-2020	$27,583	PI
7.	NSERC CRD Grant	2019-2024	$5,132,400	co-PI
6.	NSERC Engage Grant	2018-2019	$25,000	PI
5.	Alberta Innovates CASBE	2018-2019	$25,000	PI
4.	Compute Canada, Resources for Research Groups (RRG)	2018-2019	$62,849	PI
3.	Compute Canada, Resources for Research Groups (RRG)	2017-2018	$61,057	PI
2.	NSERC Discovery Grant	2017-2024	$161,000	PI
1.	University of Calgary Start-Up Grant	2016-2019	$100,000	PI

Summary of Contributions

Category	Count
Peer-Reviewed Journal Articles	44
Invited Talks	89
Plenary and Semi-Plenary Talks	3
Conference Proceedings and Presentations by students	46
Book Chapters	8

Total Citations (Google Scholar)	2,683
h-index / i10-index	26 / 37
National/International Conferences Organized	5/5
Mini-Symposia Organized	14

Conference/Symposia Organization

2027 Main organizer and conference chair of the 1st Japan-Canada Workshop on Computational Science and Engineering and 5th Conference of the Canadian Association for Computational Science and Engineering

2026 Co-organizer of the 1st Canadian Congress on Computational Science and Engineering (C3SE 2026)

2026 Main organizer of Mini-symposia Session "Stabilized and Variational-Multiscale Methods for Fluid Mechanics" at 17th World Congress on Computational Mechanics (WCCM17)

2026 Main organizer and conference chair of the 4th Conference of the Canadian Association for Computational Science and Engineering

2025 Main organizer of Mini-symposia Session "IGA for Fluids and Fluid-Structure Interaction" at 13th International Conference on Isogeometric Analysis (IGA 2025)

2025 Co-organizer of Mini-symposia Session "Computational Fluid Dynamics (CFD) and Fluid-Structure Interaction (FSI): Method Development and Applications" at 18th US National Congress on Computational Mechanics (USNCCM18)

2025 Main organizer and conference chair of the 3rd Conference of the Canadian Association for Computational Science and Engineering

2024 Main organizer and conference co-chair of the Fall 2024 Canadian Wind Energy Research Network Meeting

2024 Main organizer and conference chair of the 16th World Congress on Computational Mechanics (WCCM16)

2024 Main organizer and conference chair of the 2nd Conference of the Canadian Association for Computational Science and Engineering

2023 Co-chair of the Special Track Computational Fluid-Structure Interaction: Frontiers in Methods and Applications (CFSI 2023) at Advances in Computational Mechanics Conference (ACM 2023)

2023 Co-organizer of Mini-symposia Session "Fluid-Structure Interaction in Interface and Moving Boundary Problems" at 17th US National Congress on Computational Mechanics (USNCCM17)

2023 Co-organizer of Mini-symposia Session "Fluids and Fluid-Structure Interaction" at 11th International Conference on Isogeometric Analysis (IGA 2023)

2023 Co-organizer of Mini-symposia Session "Advances in immersed/embedded/shifted/unfitted methods for computational fluid dynamics (CFD) and fluid-structure interaction (FSI)" at 22nd Computational Fluids Conference (CFC 2023)

2023 Main organizer and conference chair of the 1st Conference of the Canadian Association for Computational Science and Engineering

2022 Main organizer and conference chair of the 10th International Conference on Isogeometric Analysis (IGA 2022)

2022 Main organizer of Mini-symposia Session "Computational Fluid-Structure Interaction: Methods and Applications" at 15th WCCM

2020 Main organizer of the Conference on Isogeometric Analysis (VIGA 2020)

2019 Main organizer of Mini-symposia Session "Computational Fluid-Structure Interaction and Moving Boundaries and Interfaces" at 15th US National Congress on Computational Mechanics (USNCCM15)

2018 Main organizer of Mini-symposia Session "Computational Fluid-Structure Interaction" at ASME's International Mechanical Engineering Congress and Exposition (IMECE 2018)

2018 Main organizer of Mini-symposia Session "Industrial Applications of IGA Methods" at IGA 2018: Integrating Design and Analysis Conference

2018 Main organizer of the Conference on Advances in Fluid-Structure Interaction (AFSI 2018)

2017 Main organizer of Mini-symposia Session "Computational Fluid-Structure Interaction: Methods and Applications" at 14th US National Congress on Computational Mechanics (USNCCM14)

2017 Main organizer of Mini-symposia Session "Isogeometric Methods in Computational Mechanics" at 2017 EMI Conference.

2017 Co-organizer of Mini-symposia Session "Stabilized, Multiscale, and Isogeometric Methods in CFD" at IACM 19th International Conference on Finite Elements in Flow Problems (FEF 2017)

2016 Co-organiser of Mini-symposia Session "Industrial applications of IGA and Meshfree methods" at 2016 USACM Conference on Isogeometric Analysis

Refereed Journal Articles

(October 2025: Citations 2683, h-index 26, i10-index 37)
* - Corresponding author; Underlined - supervised trainees

2025 (4)

44. R. Verma, D. Codoni, C. Johansen, **A. Korobenko***, "Assessment of the Spalart–Allmaras turbulence model in a stabilized finite element framework for hypersonic turbulent flows using pressure-primitive variables", *Finite Elements in Analysis & Design,* 2025, *accepted.*

43. J. Kramer*, D. Lastiwka, J. Edwards, **A. Korobenko**, C. Johansen, "Ejector recirculation and entrainment", *Journal of Propulsion and Power,* 446, 118194, 2025.

42. S. Dave and **A. Korobenko***, "Consistent reduced order modeling for wind turbine wakes using variational multiscale method and actuator line model", *Computer Methods in Applied Mechanics and Engineering,* 446, 118194, 2025

41. S. Dave and **A. Korobenko***, "Predicting smooth body flow separation with finite-element-based variational multiscale method", *Computational Mechanics,* 2025, *accepted.*

2024 (3)

40. M. Rajanna, M. Jaiswal, E. L. Johnson, N. Liu, **A. Korobenko**, Y. Bazilevs, J. Lua, N. Phan, M.-C. Hsu*, "Fluid–structure interaction modeling with non-matching interface discretizations for compressible flow problems: simulating aircraft tail buffeting", *Computational Mechanics,* 74(2), pp. 367-377, 2024.

39. H. Cen, **A. Korobenko**, Q. Zhou*, "Quantifying and predicting near-wall global intermittency in stably stratified channel flow", *Physics of Fluids,* 9(1), 014803, 2024.

38. D. Codoni, A. Bayram, M. Rajanna, C. Johansen, M.-C. Hsu, Y. Bazilevs, **A. Korobenko***, "Heat flux prediction for hypersonic flows using stabilized formulation", *Computational Mechanics,* 73(2), pp. 419-426, 2024.

2023 (3)

37. A. Bayram and **A. Korobenko***, "Modelling of multi-phase, multi-fluid flows with applications to marine hydrokinetic turbines", *Computer Methods in Applied Mechanics and Engineering,* 417 (Part A), 116433, 2023.

36. Y.Bazilevs, K.Takizawa, T.Tezduyar, **A.Korobenko**, T. Kuraishi, Y. Otoguro* ,"Computational aerodynamics with isogeometric analysis", *Journal of Mechanics,* 39*,* pp. 24-39, 2023.

35. A. Bayram, M. Dhalwala, P. Oshkai, **A. Korobenko*** ,"Numerical simulations of a vertical-axis hydrokinetic turbine with different blade-strut configurations under free-surface effects", *Engineering with Computers,* 39, pp. 1041-1054, 2023.

2022 (8)

34. M. Rajanna, E. L. Johnson, N. Liu, **A. Korobenko**, Y. Bazilevs, M.-C. Hsu*, "Fluid–structure interaction modeling with non-matching interface discretizations for compressible flow problems: computational framework and validation study", *Mathematical Models and Methods in Applied Sciences,* 32(12), pp. 2497-2528, 2022.

33. M. Rajanna, E. L. Johnson, D. Codoni, **A. Korobenko**, Y. Bazilevs, N. Liu, J. Lua, N. Phan, M.-C. Hsu*, "Finite Element Methodology for Aircraft Aerodynamics: Development, Simulation, and Validation", *Computational Mechanics,* 70(3), pp. 549-563, 2022.

32. H. Cen, Q. Zhu, **A. Korobenko*** ,"Isogeometric variational multiscale modeling of stably stratified flows over complex terrains", *Mathematical Models and Methods in Applied Sciences,* 32(12), pp. 2371-2399, 2022.

31. D. Codoni, C. Johansen, **A. Korobenko*** ,"A Streamline-Upwind Petrov-Galerkin stabilized method for the analysis of nonionized reacting hypersonic flows in thermal nonequilibrium", *Computer Methods in Applied Mechanics and Engineering,* 398, 115185, 2022.

30. M. Dhalwala, A. Bayram, P. Oshkai, **A. Korobenko*** ,"Performance and near-wake analysis of a vertical-axis hydrokinetic1turbine under a turbulent inflow", *Ocean Engineering,* 257, 111703, 2022.

29. G. Doerksen, P. Ziade, **A. Korobenko**, C. Johansen* ,"A Numerical Investigation of Recirculation in Axisymmetric Confined Jets", *Chemical Engineering Science*, 254, 117603, 2022.

28. A. Bayram and **A. Korobenko*** ,"Modeling of expiratory particles transport using an Eulerian approach and the variational multiscale method", *Atmospheric Environment*, 271, 118857, 2022.

27. H. Cen, Q. Zhu, **A. Korobenko*** ,"Wall-function-based weak imposition of Dirichlet boundary condition for stratified turbulent flows", *Computers & Fluids,* 234, 105257, 2022.

2021 (4)

26. H. Stoldt, **A. Korobenko**, P. Ziade, C. Johansen* ,"Verification and Validation of High-Fidelity Open-Source Simulation Tools for Supersonic Aircraft Aerodynamic Analysis", *Journal of Verification, Validation and Uncertainty Quantification*, 6(4), 041005 (11 pages), 2021.

25. A. Bayram and **A. Korobenko* ,**"A numerical formulation for cavitating flows around marine propellers based on variational multiscale method", *Computational Mechanics*, 68, 405-432, 2021.

24. D. Codoni, G. Moutsanidis, M.-C. Hsu, Y. Bazilevs, C.T. Johansen, **A. Korobenko***,"Stabilized methods for high-speed compressible flows: towards hypersonic simulations" *Computational Mechanics*, 67(3), 785-809, 2021.

23. H. Cen, Q. Zhu, **A. Korobenko*** ,"Simulation of stably stratified turbulent channel flow using residual-based variational multiscale method and isogeometric analysis", *Computers & Fluids,* 214, 104765, 2021.

2020 (5)

22. K. Takizawa*, Y. Bazilevs, T. Tezduyar, **A. Korobenko**, "Computational Flow Analysis in Aerospace, Energy and Transportation Technologies with the Variational Multiscale Methods", *Journal of Advanced Engineering and Computation*, 4(2), pp. 83-117, 2020.

21. M. Ravensbergen, T.A. Helgedagsrud, Y. Bazilevs, **A.Korobenko***, "Variational multiscale framework applied to atmospheric flow over complex environmental terrain", *Computer Methods in Applied Mechanics and Engineering,* 368, 113182, 2020.

20. A. Bayram and **A. Korobenko***, "Variational multi-scale framework for cavitating flows", *Computational Mechanics*, 66, pp. 49-67, 2020.

19. M. Ravensbergen, A. Bayram, **A.Korobenko***,"The Actuator Line Method for Wind Turbine Modelling Applied in a Variational Multiscale Framework", *Computers & Fluids,* 201, 104465, 2020.

18. A. Bayram, C. Bear, M. Bear, **A. Korobenko***, "Performance analysis of a vertical-axis hydrokinetic turbines array", *Computers & Fluids*, 200, 104432, 2020.

2019 (3)

17. T.A. Helgedagsrud*, Y. Bazilevs, **A.Korobenko**, K.M. Mathisen, O.A. Øiseth, "Using ALE-VMS to compute aerodynamic derivatives of bridge section", *Computers & Fluids,*179, pp. 820-832, 2019.

16. Y.Bazilevs*, J.Yan, X.Deng, **A.Korobenko**, "Computer modeling of wind turbines: 2. Free-surface FSI and fatigue-damage", *Archives of Computational Methods in Engineering*, 26(4), pp. 1101-1115, 2019.

15. **A.Korobenko***, Y.Bazilevs, K.Takizawa, T.Tezduyar, "Computer modeling of wind turbines: 1. ALE-VMS and ST-VMS aerodynamic and FSI analysis", *Archives of Computational Methods in Engineering,* 26(4), pp.1059-1099, 2019.

2017 (2)

14. **A.Korobenko*,** J.Yan, S.M.I.Gohari, S.Sarkar, Y.Bazilevs, "FSI Simulation of two back-to-back wind turbines in atmospheric boundary layer flow", *Computers & Fluids,* 158, pp.167-175, 2017.

13. J.Yan*, **A.Korobenko**, A.Tejada-Martinez, R.Golshan, Y.Bazilevs,"A new variational multiscale formulation for stratified incompressible turbulent flows", *Computers & Fluids,* 158, pp.150-156, 2017.

2016 (3)

12. J.Yan*, X.Deng, **A.Korobenko**, Y.Bazilevs "Free-surface flow modeling and simulation of horizontal-axis tidal-stream turbines", *Computers & Fluids,* 155, pp.157-166, 2016.

11. Y.Bazilevs*, **A.Korobenko**, X.Deng, J.Yan, "Fluid–Structure Interaction Modeling for Fatigue-Damage Prediction in Full-Scale Wind-Turbine Blades", *Journal of Applied Mechanics*, 83(6), 061010 (9 pages), 2016.

10. J.Yan*, **A.Korobenko**, X.Deng, Y.Bazilevs, "Computational free-surface fluid-structure interaction with application to offshore floating wind turbines", *Computers & Fluids*, 141, pp.155-174, 2016.

2015 (6)

9. J.Yan, B.Augier, **A.Korobenko**, J.Czarnowski, G.Ketterman, Y.Bazilevs* ,"FSI modeling of a propulsion system based on compliant hydrofoils in a tandem configuration", *Computers & Fluids,* 141, pp.201-211, 2015.

8. Y.Bazilevs*, X.Deng, **A.Korobenko**, F.Lanza di Scalea, S.G.Taylor, M.D.Todd, "Isogeometric Fatigue Damage Prediction in Large-Scale Composite Structures Driven by Dynamic Sensor Data", *Journal of Applied Mechanics*, 82(9), 091008, 2015.

7. Y.Bazilevs*, **A.Korobenko,** J.Yan, A.Pal, S.M.I.Gohari, S.Sarkar, "ALE-VMS Formulations for Stratified Turbulent Incompressible Flows with Applications", *Mathematical Models and Methods in Applied Science,* 25(12), pp. 2349-2375, 2015.

6. B.Augier, J.Yan, **A.Korobenko**, J.Czarnowski, G.Ketterman, Y.Bazilevs* ,"Experimental and numerical FSI study of compliant hydrofoils", *Computational Mechanics*, 55(6), pp.1079-1090, 2015.

5. X.Deng*, **A.Korobenko**, J.Yan and Y.Bazilevs, "Isogeometric Analysis of Continuum Damage in Rotation-Free Composite Shells", *Computer Methods in Applied Mechanics and Engineering*, 284, pp.349 372, 2015.

4. Y.Bazilevs*, **A.Korobenko**, X.Deng, J.Yan, "Novel Structural Modeling and Mesh Moving Techniques for Advanced FSI Simulation of Wind Turbines", *International Journal for Numerical Methods in Engineering*, 102(3-4), pp.766-783, 2015.

2014 (2)

3. Y.Bazilevs*, **A.Korobenko**, X.Deng, J.Yan, M.Kinzel, J.O.Dabiri, "FSI Modeling of Vertical-Axis Wind Turbines", *Journal of Applied Mechanics*, 81(8), 081006, 2014.

2. **A.Korobenko***, M.-C.Hsu, I.Akkerman, Y.Bazilevs, "Aerodynamic simulation of vertical-axis wind turbines*", Journal of Applied Mechanics*, 81(2), 021011, 2014.

2013 (1)

1. **A.Korobenko***, M.-C.Hsu, I.Akkerman, J.Tippmann, Y.Bazilevs, "Structural mechanics modeling and FSI simulation of wind turbines", *Mathematical Models and Methods in Applied Science*, 23, pp.249-272, 2013 **(Highly cited paper)**

Refereed Book Chapters

2023 (1)

8. **A.Korobenko***, A. Bayram, M. Dhalwala, "Variational Multi-Scale Method for High-Fidelity Simulation of Hydrokinetic Energy Applications", *Frontiers in Computational Fluid-Structure Interaction and Flow Simulation: Research from Lead Investigators under 40 - 2022*, edited by T.Tezduyar , Birkhäuser/Springer, pp. 223-254, 2023.

2021 (2)

7. **A.Korobenko***, M.Pigazzini, X.Deng, Y. Bazilevs, "Multiscale DDDAS Framework for Damage Prediction in Aerospace Composite Structures", *Handbook of Dynamic Data Driven Applications Systems*, edited by Erik P. Blasch, Frederica Darema, Sai Ravela, Alex J. Aved, Springer, pp. 693-712, 2021

6. **A.Korobenko***, M.-C. Hsu, Y. Bazilevs, "A Computational Steering Framework for Large-Scale Composite Structures: Part I—Parametric-Based Design and Analysis", *Handbook of Dynamic Data Driven Applications Systems*, edited by Erik P. Blasch, Frederica Darema, Sai Ravela, Alex J. Aved, Springer, pp. 163-180, 2021

2018 (4)

5. Y.Bazilevs*, J.Yan, X.Deng, **A.Korobenko**, "Simulating Free-Surface FSI and Fatigue-Damage in Wind-Turbine Structural Systems", *Frontiers in Computational Fluid-Structure Interaction and Flow Simulation*, edited by T.Tezduyar, Birkhäuser/Springer, pp. 1-28, 2018

4. **A.Korobenko***, Y.Bazilevs, K.Takizawa, T.Tezduyar "Recent Advances in ALE-VMS and ST-VMS Computational Aerodynamic and FSI Analysis of Wind Turbines", *Frontiers in Computational Fluid-Structure Interaction and Flow Simulation*, edited by T.Tezduyar , Birkhäuser/Springer, pp. 253-336, 2018

3. **A.Korobenko***, M.-C.Hsu, Y.Bazilevs, "A Computational Steering Framework for Large-Scale Composite Structures", *Handbook of Dynamic Data Driven Applications Systems*, edited by Erik P. Blasch, Sai Ravela, Alex J. Aved, Springer, pp. 155-171, 2018

2. **A.Korobenko***, M.Pigazzini, X.Deng, Y. Bazilevs, "Multiscale DDDAS Framework for Damage Prediction in Aerospace Composite Structures", *Handbook of Dynamic Data Driven Applications Systems*, edited by Erik P. Blasch, Sai Ravela, Alex J. Aved, Springer, pp. 677-696, 2018

2016 (1)

1. **A.Korobenko***, X. Deng, J.Yan, Y.Bazilevs, "Recent Advances in Fluid-Structure Interaction Simulations of Wind Turbines", in *Advances in Computational Fluid-Structure Interaction and Flow Simulation*, A Tribute to Tayfun Tezduyar on the Occasion of his 60th Birthday, edited by K. Takizawa and Y. Bazilevs, Springer, pp. 489-500, 2016 (**most downloaded Birkhauser book in 2017**)

Invited Talks and Conference Presentations

2025 (12)

89. "Toward Real-Time Predictive Modeling of Wind Turbine Wakes: From Multiscale Methods to Reduced-Order Simulation of Complex Atmospheric Flows", *Artificial Intelligence and Digital Twins for Earth Systems Conference (AIDT4ES),* Austin, TX, USA, September 22-24, 2025. **(Plenary Speaker)**

88. "Modeling turbulent hypersonic flows with stabilized finite elements", *Invited Lecture at the Tohoku University,* Sendai, Japan, July 9, 2025.

87. "Modeling Fluid Mechanics and Fluid-Structure Interaction using Stabilized Finite Elements and Isogeometric Analysis with Applications to Aerospace and Renewable Energy", *Invited Lecture at the Nagoya University,* Nagoya, Japan, July 8, 2025.

86. "Advances in Variational Multiscale Methods for Optimizing Wind and Marine Energy Systems", *4th International Conference on Computational Engineering and Science for Safety*

and Environmental Problems (COMPSAFE2025), Kobe, Japan, July 1-4, 2025. **(Semi-Plenary Speaker)**

85. "Recent Advances in Finite-Element-Based Stabilized and Multiscale Methods: from Marine Renewable Energy Systems to Hypersonic Flows in Thermo-Chemical Non-Equilibrium", *Invited Lecture at the EME International Seminar Series, University of Tsukuba,* Tsukuba, Japan, June 30, 2025.

84. "Consistent ROM-ALM-VMS formulation for modeling wind turbines", *XII International Conference on Adaptive Modeling and Simulation (ADMOS 2025)*, Barcelona, Spain, June 9-11, 2025.

83. "Recent Advances In Modeling Hypersonic Flows With Stabilized Finite Elements", *Math 2 Product (M2P) Emerging Technologies in Computational Science for Industry, Sustainability and Innovation,* Valencia, Spain, June 4-6, 2025.

82. "Modeling environmental flows with variational multiscale methods", *XI International Conference of Computational Methods for Coupled Problems in Science and Engineering – COUPLED2025*, Villasimius, Sardinia, Italy, May 25-28, 2025.

81. "Advanced Modeling of Marine Renewable Energy Systems Using Variational Multiscale Methods", *Invited Lecture at the International Centre for Numerical Methods in Engineering (CIMNE),* Barcelona, Spain, May 20, 2025.

80. "Finite-element-based VMS formulation for multiphase multi-fluid flows", *Alberta Mathematics Dialogue (AMD 2025), University of Calgary,* Calgary, AB, Canada, May 1-2, 2025.

79. "Reaching New Heights: Propelling the Future of Aerospace Engineering", *Invited Speaker for the Schulich Connects, Engineering Conversation & Innovation, University of Calgary,* Calgary, AB, Canada, March 20, 2025.

78. "Stabilized Finite Element Methods for Modeling Incompressible and Compressible Flows", *Invited Lecture at the University of Southern California,* Los Angeles, CA, USA, February 14, 2025.

77. "Consistent Reduced-Order Model Variational Multiscale (ROM-VMS) Formulation for Environmental Flows", 3rd *Conference on Recent Trends and Developments in Computational Science and Engineering,* Banff, Canada, January 3 - 5, 2025.

2024 (5)

76. "Finite Element Method-Based Stabilized Formulation for Hypersonic Flows in Thermal Non-Equilibrium", *Invited Lecture at the Oden Institute for Computational Engineering & Sciences Seminar Series,* Austin, TX, USA, November 19, 2024

75. "Modeling atmospheric flows with isogeometric analysis", *12th International Conference on Isogeometric Analysis – IGA2024*, St. Augustine, FL, USA, October 27-30, 2024. (**Plenary Speaker)**

74. "Advances in Fluid-Structure Interaction simulations of wind turbines", *Fall 2024 Canadian Wind Energy Research Network Meeting,* Calgary, AB, Canada, October 24-25, 2024.

73. "Stabilized Methods for Hypersonic Flows in Thermo-Chemical Non-Equilibrium", *Advances in Computational Fluid–Structure Interaction and Flow Simulation (AFSI 2024)*, Hokkaido, Japan, August 19-20, 2024

72. "Modeling smooth-body flow separation with VMS and NURBS", *2nd Conference on Recent Trends and Developments in Computational Science and Engineering,* Banff, Canada, January 13 - 16, 2024.

2023 (23)

71. "Finite Element Methods for Fluid Mechanics: Cavitation Modeling for Marine Engineering Applications", *International Workshop on Multiphase Flows: Analysis, Modelling and Numerics,* Waseda University*,* Tokyo, Japan, December 4-6, 2023.

70. "Fluid-Structure Interaction Framework for Hypersonic Flows", *Advances in Computational Mechanics Conference (ACM 2023),* Austin, TX, USA, October 22-25, 2023.

69. "Modeling smooth-body flow separation with variational multiscale method, finite elements and weakly enforced Dirichlet boundary conditions", *14th International ERCOFTAC Symposium on Engineering, Turbulence, Modelling and Measurements (ETMM14),* Barcelona, Spain, September 6-8, 2023.

68. "Variational multiscale (VMS) formulation for stratified flows with FEM, NURBS-based discretization and wall modelling: application to complex terrains", 17*th US National Congress on Computational Mechanics – USNCCM17,* Albuquerque, USA, July 23-27, 2023.

67. "Stabilized and multiscale modeling for fluid mechanics with applications to wind energy and aerospace problems", *Invited Lecture at DLR, Wind energy and C²A²S²E department*, Braunschweig, Germany, July 13, 2023.

66. "Multi-fidelity modeling framework for wind energy applications", *Invited Lecture at Department INGEGNERIA MECCANICA E AEROSPAZIALE, Sapienza University of Rome*, Rome, Italy, July 5, 2023.

65. "Performance and near-wake characteristics of a vertical-axis hydrokinetic turbine under a turbulent inflow and free-surface", *X Computational Methods in Marine Engineering – MARINE2023*, Madrid, Spain, June 27-29, 2023.

64. "NURBS-based VMS-IGA framework for predicting smooth-body flow separation", *11th International Conference on Isogeometric Analysis – IGA2023*, Lyon, France, June 18-21, 2023.

63. "Recent developments in variational multiscale (VMS) methods for multiphase and stratified flows with application to renewable energy", *Invited Lecture at Institute of Lightweight Design and Structural Biomechanics, Vienna University of Technology*, Austria, Vienna, June 14, 2023.

62. "Physics-informed neural network and reduced order modeling in the context of variational multiscale method", *X International Conference of Computational Methods for Coupled Problems in Science and Engineering – COUPLED2023*, Chania, Crete, Greece, June 5-7, 2023.

61. "Isogeometric Analysis-Based Damage Modeling for Composite Structures: Applications in Wind Energy and Aerospace", *Invited Lecture at Laboratoire de Mécanique des Structures et des Systèmes Couplés (LMSSC), Conservatoire National des Arts et Métiers (CNAM)*, Paris, France, June 1, 2023.

60. "Modeling of multiple wind turbines in atmospheric boundary layer flows using ALM-VMS formulation", *Wind Energy Science Conference – WESC2023*, Glasgow, United Kingdom, May 23-26, 2023.

59. "Multi-fidelity modeling of wind turbines using variational multiscale methods", *Invited Lecture at KTH, AC & ML Seminar series,* Stockholm, Sweden, May 17, 2023.

58. "Multi-fidelity modeling framework for wind turbine farms in complex terrains and stratified flows", *Invited Lecture at NTNU and SINTEFF Digital,* Trondheim, Norway, May 8, 2023.

57. "Recent Developments in Variational Multiscale (VMS) Methods for Multiphase and Stratified Flows with Application to Renewable Energy", *Invited Lecture at RWTH Aachen, SSD Seminar Series,* Aachen, Germany, May 8, 2023.

56. "Multiphase and free-surface modeling for marine engineering applications with VMS formulation", *Invited Lecture at Liege University, Department of Aerospace and Mechanical Engineering,* Liege, Belgium, May 3, 2023.

55. "Cavitation modeling for marine engineering applications using variational multiscale methods", *22nd Computational Fluids Conference – CFC2023*, Cannes, France, April 25-28, 2023.

54. "Numerical modeling for high-speed compressible flows: from fluid mechanics to fluid-structure interaction", *Invited Lecture at Sorbonne University, Institut Jean le Rond d'Alembert,* Paris, France, April 13, 2023.

53. "High-fidelity modeling framework for marine renewable energy applications: from wind turbine to hydrokinetic turbines", *Invited Lecture at TU Delft, OE & DSS seminar series,* Delft, Netherlands, April 6, 2023.

52. "FEM-based stabilized formulation for high-speed compressible flows: from supersonic flows to hypersonic flows in thermal non-equilibrium", *Invited Lecture at TU Delft, TU Delft Institute for Computational Science and Engineering (DCSE),* Delft, Netherlands, April 6, 2023.

51. "Aerodynamics, fluid-structure interaction and damage modeling for wind turbines using multi-fidelity modeling framework", *Invited Lecture at TU Braunschweig, Institute for Static and Dynamics,* Braunschweig, Germany, March 8, 2023.

50. "Damage modeling for composite structures based on isogeometric analysis: from wind energy to aerospace applications", *Invited Lecture at Hannover University, the Institute of Continuum Mechanics,* Hannover, Germany, February 20, 2023.

49. "Stabilized and multiscale methods for fluid mechanics with finite elements and higher order NURBS discretization: application to aerospace and wind energy applications", *1st Conference on Recent Trends and Developments in Computational Science and Engineering,* Banff, Canada, January 14 - 16, 2023.

2022 (2)

48. "Multi-fidelity modeling framework for wind turbines operating in complex environments and atmospheric boundary layer flows", *Invited Lecture at TU Munich, Wind Energy Institute,* Munich, Germany, December 14, 2022.

47. "Streamline-Upwind Petrov-Galerkin formulation for the analysis of hypersonic flows in thermal non-equilibrium", 15th *World Congress on Computational Mechanics,* online, July 31-August 5, 2022.

2021 (1)

46. "Finite Element Based Stabilized Formulation for Hypersonic Flows", 15*th US National Congress on Computational Mechanics – USNCCM16,* online, July 26-29, 2021.

2019 (8)

45. "Variational multi-scale modelling of atmospheric flows over complex terrain using IGA", *7th International Conference on Isogeometric Analysis – IGA2019*, Munich, Germany, September 18-20, 2019.

44. "Computational Fluid-Structure Interaction Framework: Stabilized Methods for Fluid Mechanics Coupled with Isogeometric Analysis for Thin Shell Structures", *IUTAM Symposium on Fluid-Structure Interaction*, in honour of Prof. Michael Paidoussis, McGill University, Montreal, QC, Canada, August 12-15, 2019

43. "Variational Multi-Scale Modeling for Cavitating Flows on Moving Domains", *15th U.S. National Congress on Computational Mechanics USNCCM15*, Austin, TX, USA, July 28 – August 1, 2019.

42. "Variational Multiscale Methods for Multiphase Flows", *Advances in Fluid-Structure Interaction (AFSI) 2019*, Okinawa, Japan, June 24-26, 2019.

41. "High-fidelity computational fluid-structure interaction framework for design and analysis of wind turbines", *PIMS Workshop on Mathematical Sciences and Clean Energy Applications*, Vancouver, BC, Canada, May 21-24, 2019

40. "Numerical Simulation of Multiple Vertical Axis Hydrokinetic Turbines using Variational Multiscale Methods", *VIII International Conference on Computational Methods in Marine Engineering (MARINE 2019),* Gothenburg, Sweden, May 13-15, 2019.

39. "Isogeometric Analysis for Fluids, Structures and Fluid-Structure Interaction", *Isogeometric Splines: Theory and Applications Workshop,* Banff, AB, Canada, February 24 – March 1, 2019.

38. "High-fidelity Numerical Modeling for Renewable Energy Applications", *20th International Conference on Finite Elements in Flow Problems-FEF2019*, Chicago, IL, USA, March 31-April 3, 2019.

2018 (5)

37. "Fluid-Structure Interaction Framework for Compressible and Incompressible Flows: Application to Aerospace and Marine Engineering", *World Congress on Computational Mechanics (WCCM) 2018*, New York, NY, USA, July 22-27, 2018

36. Panel member at Defence 4.0 - Innovation & Academia. *WestDef 2018*, Calgary, AB, Canada, June 26-28, 2018.

35. "High-Fidelity Modeling in Wind Energy: From Single Turbine to Wind Farm in Complex Terrains", *Advances in Fluid-Structure Interaction (AFSI) 2018*, Banff, AB, Canada, May 1-4, 2018

34. "Damage Prediction in Aerospace Composite Structures using Dynamically-Data-Driven Simulations", *Invited Seminar at Composite Research Network (CRN), University of British Columbia,* Vancouver, BC, Canada, April 19, 2018.

33. "Computational Fluid-Structure Interaction Framework: from Theory to Applications", *Invited Seminar at Pacific Institute for the Mathematical Sciences (PIMS),* Calgary, AB, Canada, April 5, 2018.

2017 (9)

32. "Fluid-Structure Interaction Framework for Wind Turbines Analysis", *Invited Lecture at Global Leadership Institute, UC San Diego*, San Diego, CA, USA, December 14, 2017.

31. "Computational Fluid-Structure Interaction Framework: from Theory to Applications", *Invited Seminar at University of Calgary Chapter of SIAM,* Calgary, AB, Canada, October 25, 2017.

30. "Damage Prediction in Aerospace Composite Structures using Dynamically-Data-Driven Simulations", *Invited Seminar at Iowa State University, Department of Mechanical Engineering,* Ames, IA, USA, September 27, 2017.

29. "Simulation of Multiple Wind Turbines Operating in Atmospheric Boundary Layer Flow: from Aerodynamics to Fatigue Damage", *2017 NAWEA Symposium,* Ames, IA, USA, September 26-29, 2017.

28. "Design and Analysis of Low-Cost Attritable Aircrafts using Dynamically-Data-Driven IGA Models", *5th International Conference on Isogeometric Analysis – IGA2017*, Pavia, Italy, September 11-13, 2017.

27. "FSI Framework for Wind Energy and Aerospace Engineering Applications: from Unsteady Aerodynamics to Damage Prediction", *14th U.S. National Congress on Computational Mechanics USNCCM14*, Montreal, QC, Canada, July 17-20, 2017.

26. "Structural Modeling, Aerodynamic and FSI Simulations as a Part of Multi-fidelity Framework for Self-aware Air Vehicles", *2017 Engineering Mechanics Institute (EMI) Conference of the American Society of Civil Engineers (ASCE)*, San Diego, CA, USA, June 4-7, 2017.

25. "Numerical Framework for Damage Prediction in Aerospace Composite Structures", *63rd Aeronautics Conference-AERO2017*, Toronto, ON, Canada, May 16-18, 2017.

24. "Fluid-Structure Interaction Simulations of Multiple Wind Turbines in Atmospheric Boundary Layer Flows", *19th International Conference on Finite Elements in Flow Problems-FEF2017*, Rome, Italy, April 5-7, 2017.

2016 (8)

23. "Isogeometric Modeling and FSI Analysis of Aerospace Composite Structures for Dynamically-Data-Driven Damage Prediction" *USACM Conference on Isogeometric Analysis and Meshfree Methods,* La Jolla, CA, USA, October 10-12, 2016.

22. "Multiscale DDDAS Framework for Aerospace Composite Structures with Emphasis on Unmanned Aerial Vehicle", *1st International Conference on InfoSymbiotics/DDDAS,* Hartford, CT, USA, August 9-12, 2016.

21. "Dynamic-Data-Driven Damage Prediction in Aerospace Composite Structures", *AIAA Aviation Forum 2016,* Washington, DC, USA, June 13-17, 2016.

20. "Advances in Fluid-Structure Interaction Simulations of Wind Turbines, Aerospace and Offshore Structures", *2016 Engineering Mechanics Institute (EMI) Conference of the American Society of Civil Engineers (ASCE) and Probabilistic Mechanics & Reliability Conference*, Vanderbilt University, TN, USA, May 22-25, 2016.

19. "Advanced Computational Analysis of Wind Turbines", *Invited Lecture at the Danish Center for Applied Mathematics and Mechanics, Technical University of Denmark,* Copenhagen, Denmark, May 19, 2016.

18. "Advanced Computational Analysis for Energy Applications", *Invited Lecture at the Department of Mechanical and Manufacturing Engineering, University of Calgary*, Calgary, Canada, April 19, 2016.

17. "Advanced Computational Analysis of Aerospace Composite Structures", *Invited Lecture at the Department of Mechanical, Aerospace and Biomedical Engineering, University of Tennessee, Knoxville*, Knoxville, TN, USA, April 15, 2016.

16. "Aerodynamic Simulation of Multiple Horizontal-Axis Wind Turbines Interacting with Atmospheric Boundary Layer Flow", *10th Southern California Symposium on Flow Physics (SoCal Fluids X)*, *University of California Irvine*, Irvine, April 9, 2016.

2015 (4)

15. "Isogeometric Analysis of Thin Shell Structures: From Geometry Modeling to Fluid-Structure Interaction", *Invited Lecture at the Department of Marine Technology, NTNU*, Trondheim, Norway, September 4, 2015.

14. "Dynamically Coupled Fluid-Structure Interaction and Damage Model for Fatigue Prediction in Composite Structures", *13th U.S. National Congress on Computational Mechanics USNCCM13*, San Diego, CA, USA, July 26-30, 2015.

13. "Isogeometric Dynamic-Data-Driven Analysis of Fatigue Damage in Wind Turbine Blades", *2015 Engineering Mechanics Institute (EMI) Conference of the American Society of Civil Engineers (ASCE)*, Stanford University, CA, USA, June 16-19, 2015.

12. "Computations of Atmospheric Boundary Layer Flow Interacting with Spinning Wind Turbine Rotor", *9th Southern California Symposium on Flow Physics (SoCal Fluids IX)*, San Diego State University, San Diego, April 18, 2015.

2014 (4)

11. "Computational Fluid-Structure Interaction with Emphasis on Wind Turbine Modeling", *2014 Engineering Mechanics Institute (EMI) Conference of the American Society of Civil Engineers (ASCE)*, Hamilton, ON, Canada, August 5-8, 2014.

10. "Advances in Computational FSI Including Dynamically Data-Driven Simulations", *Advances in Computational Fluid-Structure Interaction and Flow Simulation. A Conference Celebrating 60th Birthday of Tayfun E.Tezduyar*, Tokyo, Japan, March 19-21, 2014.

9. "Isogeometric Shell Modeling in Fluid-Structure Interaction Analysis of Wind Turbines", *Poster presented at Isogeometric Analysis: Integrating Design and Analysis IGA2014*, Austin, TX, USA, January 8-10, 2014. **(Poster Competition Award)**

8. "Isogeometric Shell Modeling in Fluid-Structure Interaction Analysis of Wind Turbines", *Isogeometric Analysis: Integrating Design and Analysis IGA2014*, Austin, TX, USA, January 8-10, 2014.

2013 (4)

7. "FSI Analysis of Wind Turbines at Full Scale*", Poster presented at 12th U.S. National Congress on Computational Mechanics USNCCM12*, Raleigh, NC, USA, July 22-25, 2013.

6. "FSI Analysis of Vertical-Axis Wind Turbines (VAWT) at Full Scale", *12th U.S. National Congress on Computational Mechanics USNCCM12*, Raleigh, NC, USA, July 22-25, 2013. **(USNCCM12 Travel Award)**

5. "Dynamic Data-Driven Application System Framework for Large-Scale Composite Structures", *International Conference on Computational Science (ICCS 2013)*, Barcelona, Spain, June 5-7, 2013.

4. "FSI Analysis of Wind Turbines at Full Scale", *Poster presented at the UCSD Jacobs School of Engineering 32rd Annual Research Expo*, La Jolla, California, April 18, 2013.

2012 (3)

3. "Fluid-Structure Interaction Validation Study of Horizontal Axis Wind Turbine at Full Scale", *25th JSME Computational Mechanics Division Conference*, Kobe, Japan, October 6-9, 2012.

2. Fluid–Structure Interaction Analysis of Horizontal Axis Wind Turbines with Composite Blades and Spar Structures", *6th Southern California Symposium on Flow Physics (SoCal Fluids VI)*, University of California, Santa Barbara, CA, April 14, 2012

1. "Aerodynamics and Fluid-Structure Interaction Modeling of Wind Turbines", *Poster presented at the UCSD Jacobs School of Engineering 31st Annual Research Expo*, La Jolla, CA, April 12, 2012.

Contributed Conference Proceedings and Presentations

In bold – presenter; Underlined – supervised trainees

2025

45. **R. Verma**, D. Codoni, C. Johansen, A. Korobenko "Consistent reduced order modeling for environmental flow simulations", *18th US National Congress on Computational Mechanics (USNCCM 2025),* Chicago, IL, USA, July 20-24, 2025.

44. **A. Regmi**, A. Korobenko "Simulation of environmental flow for wind farm application using actuator line method and variational multiscale method", *Alberta Mathematics Dialogue (AMD 2025), University of Calgary,* Calgary, AB, Canada, May 1-2, 2025.

43. **R. Verma**, D. Codoni, C. Johansen, A. Korobenko "Stabilized finite element methods to model compressible turbulent flows", *Alberta Mathematics Dialogue (AMD 2025), University of Calgary,* Calgary, AB, Canada, May 1-2, 2025.

42. **S. Dave**, A. Korobenko "Consistent reduced order modeling for environmental flow simulations", *Alberta Mathematics Dialogue (AMD 2025), University of Calgary,* Calgary, AB, Canada, May 1-2, 2025.

41. **S. Dave**, A. Korobenko "ROM-VMS formulation for environmental flows and wind energy applications", *3rd IACM Digital Twins in Engineering Conference (DTE 2025) & 1st ECCOMAS Artificial Intelligence and Computational Methods in Applied Science (AICOMAS 2025),* Paris, France, February 17-21, 2025.

2024

40. **A. Regmi**, A. Korobenko "Wind farm stratified flow simulations with actuator line method and variational multiscale framework", *Fall 2024 Canadian Wind Energy Research Network Meeting,* Calgary, AB, Canada, October 24-25, 2024.

39. **S. Dave**, A. Korobenko "Projection-based model order reduction of environmental flows using FEM-based variational multiscale method", *Fall 2024 Canadian Wind Energy Research Network Meeting,* Calgary, AB, Canada, October 24-25, 2024.

38. **A. Jnini**, H. Goordoyal, S. Dave, A. Korobenko, F. Vella, K. Fraser "Physics-constrained DeepONet for Surrogate CFD models: a curved backward-facing step case", *ICLR 2024 Workshop on AI4DifferentialEquations In Science*, Vienna, Austria, May 11, 2024

37. **A. Garcia**, R.L. Fyfe, A. Korobenko, C. Johansen "Design and Testing of the Multipurpose Uncrewed Fixed-Wing Advanced Supersonic Aircraft", *2024 AIAA AVIATION*, Las Vegas, NV, USA, July 29-August 2, 2024

36. **A.Regmi**, A. Korobenko, "Wind farm stratified flow simulations with actuator line method and variational multiscale framework", 16th *World Congress on Computational Mechanics – WCCM 2024,* Vancouver, BC, Canada, July 21-26, 2024.

35. **R.Verma**, D. Codoni, C. Johansen, A. Korobenko, "Turbulence modeling of high-speed flows using finite element based stabilized formulation and Spalart-Allmaras model", 16th *World Congress on Computational Mechanics – WCCM 2024,* Vancouver, BC, Canada, July 21-26, 2024.

34. **S.Dave**, A. Korobenko, "Projection-based model order reduction of environmental flows using FEM-based variational multiscale method", 16th *World Congress on Computational Mechanics – WCCM 2024,* Vancouver, BC, Canada, July 21-26, 2024.

2023

33. **S.Dave**, A. Korobenko, "Variational multiscale framework with isogeometric analysis for smooth-body flow separation in aerospace and environmental applications", *Math 2 Product (M2P) - Emerging Technologies in Computational Science for Industry, Sustainability and Innovation*, Taormina, Italy, May 30- June 1, 2023.

32. **D. Lastiwka**, A. Korobenko, C. Johansen "Analysis and Optimization of an Ejector Ramjet using CFD and a 1D Control Volume Solver", *2023 AIAA AVIATION*, San Diego, CA, USA, June 12-16, 2023

31. **S.Dave**, A. Korobenko, "Reduced order modeling with variational multiscale method for environmental flows", *22nd Computational Fluids Conference – CFC2023*, Cannes, France, April 25-28, 2023.

30. **D. Lastiwka**, A. Korobenko, S. Hinman, C. Johansen "Thermodynamic Cycle Analysis of an Ejector-Ramjet Propulsion System-Part 1", *2023 AIAA SciTech*, National Harbor, MD, USA, January 23-27, 2023

29. **T. Migadel**, D. Lastiwka, A. Korobenko, C. Johansen "Validation and Verification of reacting Pimple Central FOAM and an Analysis of the Effect of Heating the Fuel Jet of an Ejector Ramjet with a Novel Intake System", *2023 AIAA SciTech*, National Harbor, MD, USA, January 23-27, 2023

2022

28. **H. Cen**, A. Korobenko, "Isogeometric multiscale modeling of stratified boundary layers", *10th International Conference on Isogeometric Analysis*, Banff, AB, Canada, November 6-10, 2022

27. **S. Dave**, A. Korobenko, "Predicting Smooth Body flow Separation using Isogeometric Analysis, Weak Dirichlet Boundary Conditions and Variational Multiscale Modeling", *10th International Conference on Isogeometric Analysis*, Banff, AB, Canada, November 6-10, 2022

26. **C. Magas**, A. Korobenko, P. Oshkai "Effect of free-stream turbulence on the hydrodynamic performance and wake of a H-Darrieus tidal turbine", *75th Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society*, Indianapolis, IN, USA, November 20-22, 2022

25. **H. Cen**, A. Korobenko, Q. Zhou "Analysis of intermittent turbulence in stably stratified channel flow", *75th Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society*, Indianapolis, IN, USA, November 20-22, 2022

24. **D. Lastiwka**, A. Korobenko, C. Johansen "Validation and verification of pimpleCentralFOAM and 1D-ERAM solver for analysis of an ejector ramjet", *2022 AIAA Aviation Forum*, Chicago, IL, USA, June 27- July 1, 2022

23. **M. Rajanna**, E. L. Johnson, D. Codoni, A. Korobenko, Y. Bazilevs, N. Liu, J. Lua, N. Phan, M.-C. Hsu, "Finite element simulation and validation for aerospace applications: stabilized methods, weak Dirichlet boundary conditions, and discontinuity capturing for compressible flows", *2022 AIAA SCITECH 2022 Forum*, virtual, January 3-7, 2022

2021

22. **H. Cen**, A. Korobenko, Q. Zhou "Quantifying and predicting intermittency in stably stratified plane Poiseuille flow", *74th Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society,* 2021

21. **B. Dalman**, A. Korobenko, P. Ziade, A. Ramirez-Serrano, C. Johansen "Validation and verification of a conceptual design tool for evaluating small-scale, supersonic, unmanned aerial vehicles", *2021 AIAA AVIATION Forum*, virtual, August 2-6, 2021

2020

20. **H. Stoldt**, C. Johansen, A. Korobenko, P. Ziade "Verification and Validation of a High-Fidelity Open-Source Simulation Tool for Supersonic Aircraft Aerodynamic Analysis", *2020 AIAA AVIATION Forum*, Reno, NV, USA, June 15-19, 2020

2019

19. **B. Dalman**, C. Johansen, A. Ramirez-Serrano, and A. Korobenko "Multidisciplinary design optimization of a small-scale supersonic UAV using SUAVE", *Canadian Aeronautics and Space Institute (CASI) AERO 19 Conference,* Laval, Qc, Canada, May 14-16, 2019

18. **H. Stoldt**, C. Johansen, A. Korobenko, P. Ziade "Validation of rhoCentralFoam for Aerodynamics Simulations of Supersonic Aircraft" *2nd Annual Okanagan Fluid Dynamics Meeting*, Canmore, AB, Canada, April 26 -28, 2019

17. **H. Cen**, A. Korobenko, Q. Zhou "Numerical simulation of stratified plane couette flow using the residual-based variational multiscale formulation" *2nd Annual Okanagan Fluid Dynamics Meeting*, Canmore, AB, Canada, April 26 -28, 2019

16. **A. Bayram**, A. Korobenko "Performance analysis of a vertical axis hydrokinetic turbines array" *2nd Annual Okanagan Fluid Dynamics Meeting*, Canmore, AB, Canada, April 26 -28, 2019

15. **M. Ravensbergen**, A. Korobenko "The actuator line method for wind turbine modelling applied in a variational multiscale framework" *2nd Annual Okanagan Fluid Dynamics Meeting*, Canmore, AB, Canada, April 26 -28, 2019

14. **D. Codoni**, C.T. Johansen, A. Korobenko "Stabilized finite element method for the solution of compressible hypersonic flows" *2nd Annual Okanagan Fluid Dynamics Meeting*, Canmore, AB, Canada, April 26 -28, 2019

13. **M. Ravensbergen** and A. Korobenko "The Actuator Line Method for Wind Turbine Modelling Applied in a Variational Multi-Scale Framework" *Wind Energy Science Conference 2019*, Cork, Ireland, June 17-20, 2019

12. **A.Bayram** and A.Korobenko "Performance Analysis of a Vertical Axis Hydrokinetic Turbines Array" *CSME-CFDSC Congress 2019*, London, ON, Canada, June 2-5, 2019

11. **M. Ravensbergen** and A. Korobenko "The Actuator Line Method for Wind Turbine Modelling Applied in a Variational Multi-Scale Framework" *CSME-CFDSC Congress 2019*, London, ON, Canada, June 2-5, 2019

2018

10. **M. Ravensbergen** and A. Korobenko "Variational Multi-Scale Methods for Modelling Atmospheric Flows over Complex Environmental Terrain", *26th Annual Conference of the CFD Society of Canada*, Winnipeg, MB, Canada, June 10-12, 2018

2017

9. **T.A.Helgedagsrud**, Y.Bazilevs, A.Korobenko, K.M.Mathisen, O.A.Øiseth "Using ALE-VMS to Compute Wind Forces on Moving Bridge Decks", *9th National Conference on Computational Mechanics-MekIT'17,* Trondheim, Norway, May 11-12, 2017.

2016

8. A.Korobenko, **M.Pigazzini**, V.Singh, H.Kim, D.Allaire, K.Willcox, A.L.Marsden, Y.Bazilevs "Dynamic-Data-Driven Damage Prediction in Aerospace Composite Structures", *AIAA Aviation Forum 2016 Conference Proceedings*, DOI: 10.2514/6.2016-4126.

7. **J.Yan**, A.Korobenko, X.Deng, Y.Bazilevs "Computational Free-Surface FSI with Applications", *2016 Engineering Mechanics Institute (EMI) Conference of the American Society of Civil Engineers (ASCE) and Probabilistic Mechanics & Reliability Conference*, Vanderbilt University, TN, USA, May 22-25, 2016.

6. **J.Yan**, X.Deng, A.Korobenko, Y.Bazilevs "Free-surface Modeling of Tidal Stream Turbines", *10th Southern California Symposium on Flow Physics (SoCal Fluids X)*, *University of California Irvine*, Irvine, April 9, 2016.

2015

5. **J.Yan**, A.Korobenko, X.Deng, Y.Bazilevs, "Computational Free-Surface-Flow-Structure Interaction with Applications to Offshore Wind Turbines", *2015 Engineering Mechanics Institute (EMI) Conference of the American Society of Civil Engineers (ASCE)*, Stanford University, CA, USA, June 16-19, 2015.
.
4. Y.Bazilevs, A.Korobenko, **J.Yan**, A.Pal, S.M.I.Gohari, S.Sarkar, "Computations of Atmospheric Boundary Layer Flow Interacting with Spinning Wind Turbine Rotor", *9th Southern California Symposium on Flow Physics (SoCal Fluids IX)*, San Diego State University, San Diego, April 18, 2015.

2014

3. **X.Deng**, A.Korobenko, J.Yan, Y.Bazilevs, "Isogeometric Analysis of Progressive and Fatigue Failure with Application to Wind Turbine Blades", *American Society for Composites 29th Technical Conference 16th US-Japan Conference on Composite Materials ASTM-D30 Meeting*, La Jolla, CA, USA, September 8-10, 2014

2013

2. **Y. Bazilevs**, A.Korobenko, X.Deng, J.Tippman, and M.-C.Hsu, "Wind Turbine Simulation: Structural Mechanics, FSI, and Computational Steering", *5th International Conference on Coupled Problems in Science and Engineering*, Ibiza, Spain, June 17-19, 2013.

1. **Y.Bazilevs**, M.-C.Hsu, M.T.Bement, A.Korobenko, "Dynamic Data Driven Application System Framework for Large-Scale Composite Structures", *International Conference on Computational Science (ICCS 2013)*, Barcelona, Spain, June 5-7, 2013.