

Dr. Artem Korobenko

Associate Professor and Associate Head for Undergraduate Studies

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Research Interests and Expertise

Computational mechanics • fluid-structure interaction (FSI) • computational fluid dynamics (CFD) • finite element methods (FEM) and isogeometric analysis (IGA) • turbulence modeling and computations • renewable energy applications • damage in composite materials • high-performance computing (HPC) • high-speed aerodynamics and propulsion • design and analysis of supersonic UAVs • ship hydrodynamics and cavitation

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

- 2021, 2020 Schulich School of Engineering Faculty Fellowship
- 2020 Schulich School of Engineering Departmental Research Excellence Award
- 2019, 2017 Schulich School of Engineering Research Achievement Award
- 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

Academic Experience

- 2021 – present University of Calgary, Calgary, Alberta, Canada
Associate Professor and Associate Head for Undergraduate Studies, Department of Mechanical and Manufacturing Engineering
- 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

Student Supervision

2022-present	Vadym Shevtsov, PhD Student, main supervisor
2021-present	Eleftherios Tzima, PhD Student, main supervisor
2021-present	Jesus Sanchez Gil, PhD Student, main supervisor
2021-present	Sujal Dave, PhD Student, main supervisor
2021-present	Adrian Carriba, PhD Student, main supervisor
2018-present	Ahmed Bayram, PhD Candidate, main supervisor
2018-present	David Codoni, PhD Candidate, main supervisor
2022-present	Maryknoll Dsouza, MSc Student, main supervisor
2020-present	Musaddik Dhalwala, MSc Student, main supervisor
2018-2020	Carlos Forigua Rodriguez, MSc Student, main supervisor
2017-2019	Michael Ravensbergen, MSc Student, main supervisor
2019-present	Derek Lastiwka, PhD Candidate, co-supervisor
2018-present	Haoyang Cen, PhD Candidate, co-supervisor
2021-present	Tyson Migadel, MSc Student, co-supervisor
2019-present	Mohammad Hameed, MSc Student, co-supervisor
2018-2021	Henry Helmut Stoldt, MSc Student, co-supervisor
2021	Nurgul Akhshataeva, Summer research student (PURE award), main supervisor
2020	Ethan Kirkby, BSc, Summer research student (USRI award), main supervisor
2018	Yu Ning Dai, BSc, Summer research student
2018	Amnah Saleem, BSc, Summer research student (PURE award), main supervisor
2017	Richard Gao, BSc, Summer research student (USRI award), main supervisor
2017	Sarah Schmidt, BSc, Summer research student (Mitacs Globalink award), main supervisor
2017	Arthur Nguyen-Cao, BSc, Summer research student, main supervisor

Conference/Symposia Organization

2024	Main organizer of the 16th World Congress on Computational Mechanics (WCCM16)
2022	Main organizer of the Conference on Isogeometric Analysis (IGA 2022)
2022	Main organizer of Mini-symposia Session “Computational Fluid-Structure Interaction: Methods and Applications” at 15 th WCCM
2020	Main organizer of the Conference on Isogeometric Analysis (IGA 2020).
2019	Main organizer of Mini-symposia Session “Computational Fluid-Structure Interaction and Moving Boundaries and Interfaces” at 15 th 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

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)

- 2021 - present Co-founder and Treasurer for the Canadian Association for Computational Science and Engineering
- 2020 - present Member-at-Large of TTA on CFD and FSI, USACM
- 2017-present Co-founder and co-director of the University of Calgary Aerospace Network (UCAN)
- 2016-2020 Vice-chair (until 2018) and Chair for Committee on Fluid-Structure Interaction (CFSI) of the Applied Mechanics Division (AMD) of ASME
- 2016-present Member of Computational Mechanics TC at EMI
- 2012-present Scientific expert for Fulbright Graduate Student Program

Journal Referee

Intl. J. of Num. Methods for Heat and Fluid Flow, 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

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.

Refereed Journal Articles

- 2022 S. Dave and A. Korobenko “Predicting smooth body separation with variational multiscale methods”, 2022, *under preparation*
- 2022 E. Tzima, A. Bayram, A. Korobenko “Turbulence modeling around ships using FEM-based VMS methods”, 2022, *under preparation*

- 2022 M. Dhalwala, A. Bayram, P. Oshkai, A. Korobenko “Free-surface effects on a full-scale vertical axis hydrokinetic turbines”, 2021, *under preparation*
- 2022 M. Rajanna, E. L. Johnson, F. Xu, N. Liu, J. Lua, N. Phan, Y. Bazilevs, A. Korobenko, M.-C. Hsu, “Fluid–structure interaction modeling with non-matching interface discretizations for compressible flow problems: application to aircraft simulations”, 2022, *under preparation*
- 2021 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 Aircraft Applications: Stabilized Methods, Weak Dirichlet Boundary Conditions, and Discontinuity Capturing for Compressible Flows”, 2021, *under preparation*
- 2021 D. Codoni, C. Johansen, A. Korobenko “A Streamline-Upwind Petrov-Galerkin stabilized method for the analysis of nonionized reacting hypersonic flows in thermal nonequilibrium”, 2021, *under preparation*
- 2021 M. Dhalwala, A. Bayram, P. Oshkai, A. Korobenko “Performance and near-wake analysis of a vertical-axis hydrokinetic turbine under a uniform and turbulent inflow”, 2021, *under preparation*
- 2021 G. Doerksen, P. Ziade, **A. Korobenko**, C. Johansen “A Numerical Investigation of Recirculation in Axisymmetric Confined Jets”, *Chemical Engineering Science*, 2021, *under review*
- 2021 A. Bayram and **A. Korobenko** “Modeling of expiratory particles transport using an Eulerian approach and the variational multiscale method”, *Atmospheric Environment*, 2021, *accepted*
- 2021 H. Cen, Q. Zhu, **A. Korobenko** “Wall-function-based weak imposition of Dirichlet boundary condition for stratified turbulent flows”, *Computers & Fluids*, 2021, *accepted*
- 2021 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
- 2021 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
- 2021 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
- 2021 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 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

- 2020 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
- 2020 A. Bayram and **A. Korobenko** “Variational multi-scale framework for cavitating flows”, *Computational Mechanics*, 66, pp. 49-67, 2020
- 2020 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
- 2020 A. Bayram, C. Bear, M. Bear, **A. Korobenko** “Performance analysis of a vertical-axis hydrokinetic turbines array”, *Computers & Fluids*, 200, 104432, 2020
- 2019 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
- 2019 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
- 2019 **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 **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
- 2017 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 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
- 2016 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
- 2016 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 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
- 2015 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

- 2015 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
- 2015 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
- 2015 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
- 2015 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 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
- 2014 **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 **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**)

Book Chapters

- 2018 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
- 2018 **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
- 2018 **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
- 2018 **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 **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

- 2021 “Finite Element Based Stabilized Formulation for Hypersonic Flows”, *15th US National Congress on Computational Mechanics – USNCCM16*, online, July 26-29, 2021.
- 2019 “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.
- 2019 “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
- 2019 “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.
- 2019 “Variational Multiscale Methods for Multiphase Flows”, *Advances in Fluid-Structure Interaction (AFSI) 2019*, Okinawa, Japan, June 24-26, 2019.
- 2019 “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
- 2019 “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.
- 2019 “Isogeometric Analysis for Fluids, Structures and Fluid-Structure Interaction”, *Isogeometric Splines: Theory and Applications Workshop*, Banff, AB, Canada, February 24 – March 1, 2019.
- 2019 “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 “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
- 2018 Panel member at Defence 4.0 - Innovation & Academia. *WestDef 2018*, Calgary, AB, Canada, June 26-28, 2018.
- 2018 “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
- 2018 “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.

- 2018 “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 “Fluid-Structure Interaction Framework for Wind Turbines Analysis”, *Invited Lecture at Global Leadership Institute, UC San Diego*, San Diego, CA, USA, December 14, 2017.
- 2017 “Computational Fluid-Structure Interaction Framework: from Theory to Applications”, *Invited Seminar at University of Calgary Chapter of SIAM*, Calgary, AB, Canada, October 25, 2017.
- 2017 “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.
- 2017 “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.
- 2017 “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.
- 2017 “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.
- 2017 “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.
- 2017 “Numerical Framework for Damage Prediction in Aerospace Composite Structures”, *63rd Aeronautics Conference-AERO2017*, Toronto, ON, Canada, May 16-18, 2017.
- 2017 “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 “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.
- 2016 “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.
- 2016 “Dynamic-Data-Driven Damage Prediction in Aerospace Composite Structures”, *AIAA Aviation Forum 2016*, Washington, DC, USA, June 13-17, 2016.
- 2016 “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.

- 2016 “Advanced Computational Analysis of Wind Turbines”, *Danish Center for Applied Mathematics and Mechanics, Technical University of Denmark*, Copenhagen, Denmark, May 19, 2016.
- 2016 “Advanced Computational Analysis for Energy Applications”, *Department of Mechanical and Manufacturing Engineering, University of Calgary*, Calgary, Canada, April 19, 2016.
- 2016 “Advanced Computational Analysis of Aerospace Composite Structures”, *Department of Mechanical, Aerospace and Biomedical Engineering, University of Tennessee, Knoxville*, Knoxville, TN, USA, April 15, 2016.
- 2016 “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 “Isogeometric Analysis of Thin Shell Structures: From Geometry Modeling to Fluid-Structure Interaction”, *Department of Marine Technology, NTNU*, Trondheim, Norway, September 4, 2015.
- 2015 “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.
- 2015 “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.
- 2015 “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 “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.
- 2014 “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.
- 2014 “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)**
- 2014 “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 “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.

- 2013 “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)**
- 2013 “Dynamic Data-Driven Application System Framework for Large-Scale Composite Structures”, *International Conference on Computational Science (ICCS 2013)*, Barcelona, Spain, June 5-7, 2013.
- 2013 “FSI Analysis of Wind Turbines at Full Scale”, *Poster presented at the UCSD Jacobs School of Engineering 32nd Annual Research Expo*, La Jolla, California, April 18, 2013.
- 2012 “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.
- 2012 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
- 2012 “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
(presenter is in bold)

- 2021 **H. Cen**, A. Korobenko, Q. Zhou “Quantifying and predicting intermittency in stably stratified plane Poiseuille flow”, *Bulletin of the American Physical Society*, 2021
- 2021 **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 **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 **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
- 2019 **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
- 2019 **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
- 2019 **A. Bayram Mohamed**, A. Korobenko “Performance analysis of a vertical axis hydrokinetic turbines array” *2nd Annual Okanagan Fluid Dynamics Meeting*, Canmore, AB, Canada, April 26 -28, 2019

- 2019 **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
- 2019 **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
- 2019 **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
- 2019 **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
- 2019 **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 **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 **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.
- 2017 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.
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