Kyle Schwiebert
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Oak Ridge National Laboratory
Multiscale Methods and Dynamics Group
1 Bethel Valley Road, Oak Ridge, TN 37830

EDUCATION

Applied and Computational Mathematics:

Michigan Technological University — Ph.D. April 2024
Dissertation: *LES-C Turbulence models and Fluid Flow Modeling: Analysis and Application to Incompressible Turbulence and Fluid-Fluid Interaction*

Michigan Technological University — M.S. 2021
Thesis: *Improving the temporal accuracy of turbulence models and resolving the implementation issues of fluid flow modeling.*

Michigan Technological University — B.S. *summa cum laude* 2019

Chemical Engineering:

Michigan Technological University — B.S. *summa cum laude* 2019

FUNDING

Finishing Fellowship, January 2024
Amount: Fully supported
Awarded by: Michigan Technological University

Graduate Research Fellowship, *Sole PI,* May 2022
Amount: $5,000
Awarded by: Michigan Space Grant Consortium
Project: *LES-C turbulence models and their applications to aerodynamic phenomena*

EMPLOYMENT

Multiscale Methods and Dynamics Group, Oak Ridge National Laboratory — from June 2024
Postdoctoral Research Associate

Dept. of Mathematical Sciences, Michigan Technological University — August 2019 to May 2024
Graduate Teaching Instructor

Theoretical Division: T-5, Los Alamos National Laboratory — August 2022 to December 2022
Graduate Research Assistant

Theoretical Division: T-5, Los Alamos National Laboratory — May 2022 to July 2022
NSF Mathematical Sciences Graduate Intern

AWARDS

Outstanding Research Award, May 2022
Awarded by: Dept. of Mathematical Sciences, Michigan Technological University

PUBLICATIONS

- A.E. Labovsky and K.J. Schwiebert, 'Note On Two Formulations of Crank-Nicolson Method for Navier-Stokes Equations," *Numerical Algorithms*. December 2024.
  DOI: https://doi.org/10.1007/s11075-024-01983-w

- M. Aggul, A.E. Labovsky, and K.J. Schwiebert "Three-Step LES-C Models for Flows at High Reynolds Numbers," *Applied and Computational Mathematics*. December 2024.
  DOI: https://doi.org/10.1007/s40314-024-03015-8

- Y. Batugedara, A.E. Labovsky and K.J. Schwiebert, "Validation of LES-C Turbulence Models," *Computer Methods in Applied Mechanics and Engineering*, Vol. 418 A, January 2024.
  DOI: https://doi.org/10.1016/j.cma.2023.116458

- M. Aggul, A.E. Labovsky, E. Onal and K.J. Schwiebert, "Fluid-Fluid Interaction Problems at High Reynolds Numbers: Reducing the Modeling Error with LES-C", *SIAM Journal on Numerical Analysis*, vol. 61 issue 2 pp. 707-732, 2023.
  DOI: https://doi.org/10.1137/22M1494269

- Y. Batugedara and K.J. Schwiebert, "Note on the effect of grad-div stabilization on calculating drag and lift coefficients," *Applied Mathematics and Computation*, Vol. 434, December 2022.
  DOI: https://doi.org/10.1016/j.amc.2022.127434

- M. Aggul, A.E. Labovsky, and K.J. Schwiebert, "NS-ω model for fluid-fluid interaction problems at high Reynolds numbers," *Computer Methods in Applied Mechanics and Engineering*, Vol. 395, May 2022.
  DOI: https://doi.org/10.1016/j.cma.2022.115052

- Y. Batugedara, A.E. Labovsky, and K.J. Schwiebert, "Higher temporal accuracy for LES-C turbulence models," *Computer Methods in Applied Mechanics and Engineering*, Vol. 377, April 2021.
  DOI: https://doi.org/10.1016/j.cma.2021.113696

PRESENTATIONS

- M. Aggul, A.E. Labovsky, Eda Onal, and K.J. Schwiebert, "LES-C models of turbulent fluid-fluid interaction problems," Society for Applied and Industrial Mathematics Central Sectional, October 2023.

- M. Aggul, Y. Batugedara, A.E. Labovsky, Eda Onal, and K.J. Schwiebert "Verifying and applying LES-C turbulence models for turbulent incompressible flow and fluid-fluid interaction problems," XI International Conference on Adaptive Modeling and Simulation, June 2023.

- A.E. Labovsky and K.J. Schwiebert, "Note on two formulations of Crank-Nicolson method for Navier-Stokes equations," Spring 2023 American Mathematical Society Central Sectional, April 2023.

- M. Aggul, A.E. Labovsky, and K.J. Schwiebert "Higher Order Models for Turbulent Fluid-Fluid Interaction Problems," Michigan Space Grant Consortium Fall 2022 Conference, October 2022.

- J. Andrej, K.J. Schwiebert, Q. Tang, "Added Mass Partitioning for Fluid Structure Interaction Problems," National Science Foundation Mathematical Sciences Graduate Internship Program Symposium, August 2022.

- M. Aggul, A.E. Labovsky, and K.J. Schwiebert "NS-ω model for fluid-fluid interaction problems at high Reynolds numbers," Joint Mathematics Meetings 2022, April 2022.

- Y. Batugedara and K.J. Schwiebert, "Note on the Effect of Grad-Div Stabilization on Calculating Drag and Lift Coefficients," 4^{th} International Conference on Advances in Natural and Applied Sciences (ICANAS), September 2021.

TECHNICAL SKILLS

Programming: C++, MATLAB, Julia
Finite element packages: deal.II, FreeFEM++, MFEM

TEACHING

Calculus I	*Teaching Assistant*	Fa 2019
Calculus I	*Instructor*	Sp 2020, Fa 2023, Fa 2024
Calculus for the Life Sciences	*Instructor*	Su 2020 to Fa 2021
Calculus II	*Instructor*	Sp 2022
Elementary Differential Equations	*Instructor*	Su 2023