Yuanwei Bin

Curriculum Vitæ Summary

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College of Engineering
Peking University

Professional Appointments

2021-on **Visiting Scholar** in *Mechanical Engineering*, Pennsylvania State University

Education

2019-on **Ph.D. candidate** in *Mechanics*, Peking University

2015-2019 **Bachelor degree** in *Energy Engineering*, University of Science and Technology of China

2015-2019 **Double degree** in *Computer Science*, University of Science and Technology of China

2017-2017 **Exchange student**, National Tsing Hua University

Membership

2021-on The American Physical Society

2023-on The American Institute of Aeronautics and Astronautics

Notable Awards and Scholarships

2023 **"CFD Best Paper Award"** in 2023 International Mechanical Engineering Congress & Exposition

2023 Peking University President's Scholarship

2021 Peking University President's Scholarship

2021 Outstanding Graduate of University of Science and Technology of China

Publications

2023 Large-eddy simulation of separated flows on unconventionally coarse grids.
Journal of Fluid Engineering.
Bin, Y., Park, G. I., Lv, Y., & Yang, X. I A.

2023 A *priori* screening of data-enabled turbulence models.
Pre-print, submitted to Physical Review Fluids.
Chen, P. E S, **Bin, Y.**, Yang, X. I A, Shi, Y., Abkar, M., & Park, G. I..

2023 Constrained re-calibration of Reynolds-averaged Navier-Stokes models.
AIAA Journal.
Bin, Y., Huang, G., Kunz, R., & Yang, X. I A.

2023 A *prior* investigation on heavy particles movement in compressible homogenous isotropic turbulence.
Chinese Journal of Theoretical and Applied Mechanics.
Bin, Y., Wu, Q., Xia, Z., & Shi, Y..

2023 Data-enabled re-calibration of the Spalart-Allmaras model.
AIAA Journal.
Bin, Y., Huang, G., & Yang, X. I A.

2022 Evolution of two counter-rotating vortices in a stratified turbulent environment.
Journal of Fluid Mechanics.
Bin, Y., Yang, X. I A, Yang, Y., Ni, R., & Shi, Y..

2022 Progressive, extrapolative machine learning for near-wall turbulence modeling.
Physical Review Fluids.
Bin, Y., Chen, L., Huang, G., & Yang, X. I A.

2021 A new idea to predict reshocked RichtmyerMeshkov mixing: Constrained large-eddy simulation.
Journal of Fluid Mechanics.
Bin, Y., Xiao, M., Shi, Y., Zhang, Y., & Chen, S..

Conference Proceedings

2023 A rubber-band approach to Reynolds-averaged Navier-Stokes modeling
76th Annual Meeting of the Division of Fluid Dynamics
Bin, Y., Yang, X. I A, Huang, G., & Kunz, R.

2023 A priori screening of machine-learning turbulence models
76th Annual Meeting of the Division of Fluid Dynamics
Chen, P. E S, **Bin, Y.**, Shi, Y., Abkar, M., & Yang, X. I A

2023 Design Optimization and Uncertainty Quantification of a Dual Airfoil System
76th Annual Meeting of the Division of Fluid Dynamics
Rekos, J., **Bin, Y.**, & Yang, X. I A

2023 Towards a physical interpretation of machine-learned turbulence models
76th Annual Meeting of the Division of Fluid Dynamics
Li, J., **Bin, Y.**, Huang, G., & Yang, X. I A

2022 Data-enabled, progressive recalibration of the Spalart-Allmaras model for general purposes
75th Annual Meeting of the Division of Fluid Dynamics
Bin, Y., & Yang, X. I A

2022 Exponential-like decay of the centerline velocity deficit and budget analysis in stratified wake
75th Annual Meeting of the Division of Fluid Dynamics
Li, J., **Bin, Y.**, Yang, X. I A, & Kunz, R.

2022 Progressive, extrapolative machine learning in turbulence modeling
Symposium on Turbulence Modeling: Roadblocks, and the Potential for Machine Learning 2022
Bin, Y., Li, J., Yang, X. I A

2021 Kinetic Energy Transport in the neighborhood of a counter-rotating vortex pair in a stratified and turbulent environment
74th Annual Meeting of the Division of Fluid Dynamics
Yang, X. I A, **Bin, Y.**, Ni, R., Yang, Y., & Kunz, R..

Interested Research Directions

- Stratified flow
- Mesh generation
- Reduce-order model
- Turbulence model
- ML in turbulence
- Vortex dynamics
- Numerical scheme
- etc.

Work Experience

2017 *Teaching Assistant*
Electromagnetism, University of Science and Technology of China

2018 *Teaching Assistant*
Electromagnetism, University of Science and Technology of China

2018 *Teaching Assistant*
Complex Analysis, University of Science and Technology of China

2019 *Teaching Assistant*
Calculation Method, University of Science and Technology of China

2019 *Teaching Assistant*
Advanced Mathematics, Peking University

Technical and Personal skills

- **Programming Languages:** C, C++, Python, Fortran, Matlab.
- **Industry Software Skills:** OpenFOAM, PointWise, SolidWorks, AutoCAD.