

Xinxin Wang , Ph.D. Candidate

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🌐 <https://wazedwxx.github.io/>



Education

- 2021 – 📖 **Ph.D. in Aeronautical and Astronautical Science and Technology**
National University of Defense Technology, China

- 2018 – 2020 📖 **M.S. in Aeronautical and Astronautical Science and Technology**
National University of Defense Technology , China
Thesis title: *Applications of Immersed Boundary Method on Detonation Simulation.*

- 2014 – 2018 📖 **B.S. in Flight Vehicle Propulsion Engineering**
Northwestern Polytechnical University , China
Thesis title: *Design of Experimental Device for High Pressure Combustion Characteristics of Solid Propellant.*

Research Publications

Journal Articles

- 1 **Xinxin, W.**, Ralf, D., Jianhan, L., Xiaodong, C., & Wandong, Z. (n.d.). A second order ghost-cell immersed boundary method with hybrid reconstruction for compressible simulations. *Computer and Fluids, (Accept)*.
- 2 Wandong, Z., Jianhan, L., Ralf, D., Xiaodong, C., & **Xinxin, W.** (2021). Effect of transverse jet position on flame propagation regime. *Physics of Fluids*, 33(9), 091704. [🔗 doi:https://doi.org/10.1063/5.0063363](https://doi.org/10.1063/5.0063363)

Conference Proceedings

- 1 Wandong, Z., Jianhan, L., Xiaodong, C., Ralf, D., & **Xinxin, W.** (2022). Effect of mach number on the flame acceleration and deflagration-to-detonation transition. In *28th international colloquium on the dynamics of explosions and reactive systems*, Napoli, Italy.
- 2 Can, N., Hongbo, W., Mingbo, S., Yixin, Y., Yanan, W., Li, P., & **Xinxin, W.** (2021). Numerical study of shock train characteristics in reverse pressure supersonic pipeline flow. In *5th symposium on coupling flow of internal and external flows of ramjet engines*, Weihai, China.
- 3 Wandong, Z., Jianhan, L., Xiaodong, C., & **Xinxin, W.** (2021). The influence of the transverse jet in the ddt process on the flame propagation mode. In *The 19th national conference of the computational fluid dynamics*, Nanjing, China.
- 4 Wandong, Z., Jianhan, L., **Xinxin, W.**, & Xiaodong, C. (2021). Flame-turbulence interaction in the process of ddt in a fluid-solid combination obstacle. In *7th symposium on heat and mass transfer*, Zhangzhou, China.
- 5 **Xinxin, W.**, Jianhan, L., Xiaodong, C., & Wandong, Z. (2021). An improved ghost-cell immersed boundary method for detonation simulations. In *21st iacm computational fluids conference (cfc 2021)*, HangZhou, China.

- 6 **Xinxin, W.**, Jianhan, L., Xiaodong, C., Wandong, Z., & Liang, L. (2020). Adaptive simulation on multiple wave mode of rotating detonation combustion. In *Research on future warfare and missile weapon system conference*, Taiyuan, China.
- 7 Liang, L., Wang, H., Xiong, D., Sun, M., Tang, T., Zhao, G., & **Xinxin, W.** (2019). An adaptive high-resolution and low-dissipation hybrid energy consistent/wenocu scheme. In *4th international conference on computational modeling, simulation and applied mathematics*, Guangzhou, China.

Research Experience

- Present
 - 📖 Focusing on the flow, combustion and heat transfer within an advanced Cartesian adaptive method.
 - 📖 Developing an improved immersed boundary method for the 2D and 3D complex boundaries in compressible flow simulations with Multi-GPU implementations through MPI.
 - 📖 Using developed immersed boundary method to investigate the flow and combustion in compressible flow, especially focusing on the efficiency of the detonation combustion calculation.
- 2020
 - 📖 Developed an improved ghost-cell immersed boundary method with hybrid reconstruction for geometrically complex boundaries in compressible flow simulations.
- 2019
 - 📖 Developed the application of 2D and 3D rotating detonation simulation base on the open-source program of blocked-structured Adaptive mesh refinement Object-oriented C++ (AMROC).
- 2018
 - 📖 Developed numerical transient CFD models to investigate and analyze the flow and heat transfer in rotating detonation combustion. Having a comprehensive knowledge concerning detonation combustion, especially for the detonation theory.

Skills

- Languages
 - 📖 Strong reading, writing and speaking competencies for English, Chinese.
- Coding
 - 📖 C++, Python, Fortran, Matlab, Shell, \LaTeX , ...
- Web Dev
 - 📖 HTML, CSS.
- Misc.
 - 📖 Academic research, teaching, training, consultation, \LaTeX typesetting and publishing.



Miscellaneous Experience

Awards and Achievements

- 2016
 - 📖 **Excellent School Students**, Northwestern Polytechnical University.
- 2019
 - 📖 **Third Prize in National Post-Graduate Mathematical Contest in Modeling**, Department of Higher Education of the Ministry of Education.
- 2021
 - 📖 **Third Prize in National University Student Social Practice and Science Contest on Energy Saving & Emission Reduce**, Department of Higher Education of the Ministry of Education.

Miscellaneous Experience (continued)

Certification

- 2018  **College English Test Band 6**,. Department of Higher Education of the Ministry of Education .
- 2015  **National Computer Rank Examination Certificate Grade 2**. Awarded by National Education Examinations Authority.