



High-Speed Aerodynamics and High Energy and Efficiency Aerospace Propulsion System: Modeling and Optimization

Guest Editor:

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Message from the Guest Editor

High-speed wall-bounded flows play a key role in aerospace applications, such as unmanned supersonic/hypersonic vehicles, scramjets, advanced space aircraft, and propulsion systems. The development of an extremely thin boundary layer plus the abrupt changes in the wall on the freestream flow parameters result in high momentum/thermal gradients with a significant impact on the transport phenomena. Hypersonic flows are energetic and result in regions of high temperature, causing internal energy excitation and aerothermodynamics problems.

The Special Issue is focused on documenting innovative developments in the fields of high-speed fluid dynamics related to external and internal fluid flows for aerospace applications and basic research. Suggested topics include (but are not fixed):

- Spatially developing turbulent boundary layer (SDTBL);
- Jet in crossflow problem (JICF);
- DNS/LES/RANS;
- High-speed aerodynamics of vehicles;
- Boundary layer transport phenomena;
- Shock wave boundary layer interactions (SWBLIs);
- Rarefied flows;
- Propulsion system analysis;
- Combustion modeling;
- Parallel and GPU programming in CFD;
- Coherent structure analysis.





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Message from the Editor-in-Chief

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