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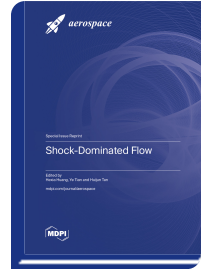
Special Issue Reprint

Shock-Dominated Flow

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Shock-dominated flow is frequently encountered in high-speed aircraft and engines, and its flow characteristics directly determine the aerodynamic performance of the aircraft and engines. Due to the strong discontinuity and pressurization properties of shock waves, the shock-dominant flow exhibits strong non-linearity, strong inviscid–viscous interaction, and significant historical effects, making it difficult to predict the related flow structures and behaviors. With the development of aircraft towards higher speeds, better performance, and more intelligent control, shock-dominated flow is a key scientific issue, involving complex high-speed aerodynamics, flow stability, fluid–thermal structure–acoustic multi-fields interaction, flow control, and artificial intelligence. For this reason, this Special Issue focuses on the shock–boundary layer interaction, shock–shock interaction, shock–vortex interaction, shock oscillation, shock-dominated flow in high-speed aircraft/engines, computational fluid dynamics (CFD) and experimental methods in shock-dominated flow research, shock aerodynamic heating and cooling, shock–thermal structure interaction, etc.



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