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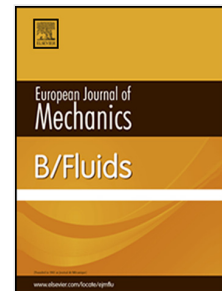
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Kinetic simulation of a supersonic compressible flow over different geometry bodies

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Abstract

Numerical simulation of a supersonic compressible gas flow over different geometry bodies, namely, a flat plate, a hollow cylinder flare and a backward-facing step for different Reynolds numbers based on the numerical solution of the S-model of the Boltzmann equation is presented. Computations are performed for different thermal boundary conditions: constant wall temperature and adiabatic wall. The flow structure and distributions of surface pressure, skin friction and heat transfer coefficients are studied. Comparison with available analytical, Direct Simulation Monte Carlo method results and experimental data is carried out and demonstrated good agreement. The appearance of

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