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Abstract #

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Title

HyperCODA -- Stabilization methods for hypersonic flows

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Abstract

In recent months, the topic of hypersonics has gained increased attention on the global stage. In hypersonic flows, shocks lead to stark increases of pressure and temperature and, in turn, infer instabilities into the numerical simulation. To improve upon the convergence behavior, many methods have been investigated: Starting from shock-indicator-based stabilization terms in the used approximate Riemann solvers, e.g. [1, 2], over residual smoothing techniques in the explicit time integration methods [3], to different reconstruction methods in primitive variables. This contribution evaluates the performance of combinations of the above for simple hypersonic test cases.

References

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