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A family of high-order gas-kinetic schemes and its comparison with Riemann solver based high-order methods

Xing Ji, Fengxiang Zhao, Wei Shyy, Kun Xu

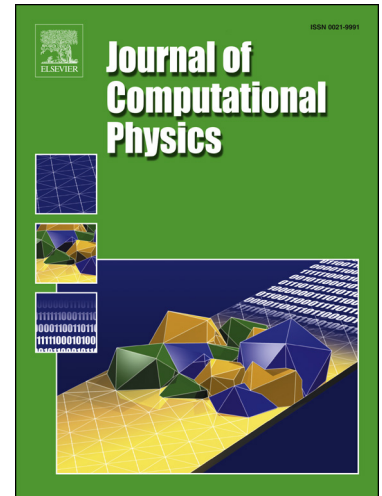
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Highlights

- Based on the using multistage multi-derivative (MSMD) technique, a family of high order gas kinetic schemes (GKS) have been constructed and tested.
- The efficiencies of the MSMD GKS and other schemes, such as the Runge-Kutta method with the first order Riemann flux solver, have been evaluated.
- The MSMD provides an alternative way to design high order schemes. It shows great potential to further improve the accuracy, efficiency, and robustness of the current existing high order methods.

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