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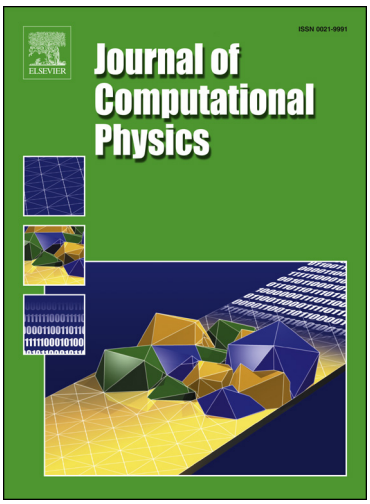

The discontinuous Galerkin spectral element methods for compressible flows on two-dimensional mixed grids

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Highlights

- The discontinuous Galerkin spectral element (DGSEM) is generalized to mixed triangular and quadrilateral grids.
- The influence of insufficient SCP quadrature to DGSEM is analyzed.
- The dispersion and dissipation property of DGSEM on triangular grids is given and compared with that of nodal DG method.
- A problem independent limiting procedure containing a new high-resolution WENO limiter is proposed for capturing shock waves.
- The DGSEM scheme is applied to solve the two dimensional compressible flows on mixed grids.

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