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The effect of artificial bulk viscosity in simulations of forced compressible turbulence

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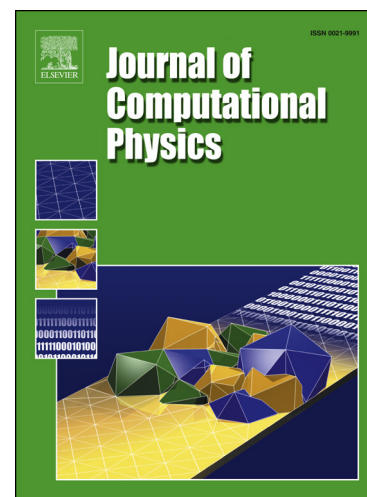
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Highlights

- Simulations of forced compressible turbulence are carried out using an artificial bulk viscosity.
- Results show that the total artificial dissipation introduced by the artificial bulk viscosity significantly outweighs the physical dissipation introduced by the fluid viscosity.
- Alternate artificial bulk viscosity models that have previously been proposed in the literature did not diminish the high levels of artificial dissipation.
- A modified forcing mechanism that explicitly accounts for the effect of the artificial bulk viscosity to increase the magnitude of physical dissipation was tested.

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