

Abstract Submitted  
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**Numerical Simulation of Flows with Shocks and Turbulence using Observable Euler Equations** HARESHRAM NATARAJAN, KAMRAN MOHSENI, University of Florida — Problems involving shocks and turbulence in fluids are multi-scale in nature and are prone to continuous generation of high-wavenumber modes or small-scales. In practical applications, one is interested in an evolution equation for the large scale quantities without resolving the details of the small-scales. In this study observable Euler equations are employed in order to simulate flows with shocks and turbulence. Numerical results for 1D shock tube problem, 2D interaction of normal shock with vorticity/entropy wave, 3D Taylor Green problem will be reported and compared with the other available techniques.

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