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Part of [MS41 Deterministic and Stochastic Aspects of Fluid Dynamics - Part II of II](#)
Computation of Entropic Measure-Valued Solutions for Euler Equations

Abstract. Entropy stability plays an important role in the dynamics of hyperbolic systems of conservation laws. Entropic solutions need not be unique. Instead, they could be interpreted in an average sense as measure-valued solutions, part of an ensemble average in configuration space. We revisit the general framework of numerical entropy stability for difference approximations of such nonlinear equations. Our approach is based on comparing numerical viscosities with entropy conservative schemes. We demonstrate this approach with a host of high order entropic schemes. In particular, this paradigm serves as the building block for a class of non-oscillatory entropic schemes of arbitrarily high-order of accuracy, called TeCNO schemes. Numerical experiments provide a remarkable evidence for the effectiveness of the TeCNO schemes. These include recent TeCNO-based computation of entropy measure valued solutions.

Authors

- *Eitan Tadmor, University of Maryland, USA, tadmor@cscamm.umd.edu*

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