

Tuesday, Oct. 13 at 9:30 am:

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Title: CFL-less explicit schemes for conservation laws based on a kinetic approach

Abstract:

By a combination of well-established mathematical techniques, it is possible to construct a general numerical method for solving any hyperbolic system of conservation laws with the following interesting features: time-explicit, unconditionally stable, accepting unstructured arbitrary meshes, of arbitrary order and naturally parallel. The scheme can be made entropy preserving or entropy dissipative, depending on the needed features.

We give an overview of the construction of the method and examples of application to multiphase compressible flows and MHD simulations.