

Abstract Submitted
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High-performance and high-order numerical methods for 2D Navier-Stokes equations¹ VINICIUS HENRIQUE AURICHIO, ATTILIO CUCCHIERI, MARIA LUISA BAMBOZZI DE OLIVEIRA, Univ de Sao Paulo- dup record — Since numerical simulation of a flow is a computationally-intensive problem, our main goal is to develop numerical methods - to solve the fluid equations of motion (compressible Navier-Stokes) in 2D - that are also suitable for the high-performance computing framework. We study known methods, such as flux-splitting, MacCormack, and compact schemes, to guide our search. In particular, we consider some high-order versions of these methods, since they allow for high-resolution with less grid points, possibly reducing the computation times. Our effort is focused on obtaining shock-capturing, multiscale, low-numerical dissipation methods.

¹CNPq-Brazil

Vinicius Henrique Aurichio
Univ de Sao Paulo- dup record

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