



Oberseminar Mathematische Strömungsmechanik

Institut für Mathematik der Julius-Maximilians-Universität Würzburg

Hyperbolic equations - structure preserving methods & other topics

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One- and multi-dimensional Central WENO reconstructions for implementing boundary conditions without ghost cells

Abstract:

We address the issue of point value reconstructions from cell averages in the context of third order finite volume schemes, focusing in particular on the cells close to the boundaries of the domain. In [Naumann, Kolb, Semplice - 2018], motivated by the difficulty of choosing appropriate boundary conditions at the internal nodes of a network, a different technique was explored that avoids the use of ghost cells, but instead employs for the boundary cells a different stencil, biased towards the interior of the domain. Extending the approach of that perp, which does not make use of ghost cells and relies on the adaptive-order CWENOZ reconstructions introduced in [Semplice, Visconti - 2020], we propose a more accurate reconstruction for the one-dimensional case and a two-dimensional one for Cartesian grids. The main reference for this work is [Semplice, Travaglia, Puppo - 2021]

via Zoom video conference (request the Zoom link from klingen@mathematik.uni-wuerzburg.de)

Friday, Nov. 26 at 3 pm CET

Zu diesem Vortrag sind Sie herzlich eingeladen.

gez. Christian Klingenberg