



Oberseminar Mathematische Strömungsmechanik

Institut für Mathematik der Julius-Maximilians-Universität Würzburg

Structure preserving numerical methods for hyperbolic equations

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Two examples of multi well-balanced schemes for shallow water type systems

Abstract:

Many systems of shallow water type arise in the modeling of thin layer flows. The sources can take several forms, and for each of them the question of building a well-balanced scheme comes out. We are interested here in the case when it is required to build a numerical scheme that preserves two nontrivial families of steady states at rest. Such a scheme can be called multi well-balanced. In order to apply the reconstruction method one has to manage with the two families at the same time. I will show how it can be possible while at the same time verifying a semi-discrete entropy inequality.

Two examples of entropy satisfying multi well-balanced schemes will be given: the shallow water MHD system with topography, and a shallow water system with internal variable and topography.

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

Friday, Feb. 19 at 3 pm CET

Zu diesem Vortrag sind Sie herzlich eingeladen.

gez. *Christian Klingenberg*