



Oberseminar Mathematische Strömungsmechanik

Institut für Mathematik der Julius-Maximilians-Universität Würzburg

Jan Giesselmann

Technische Universität Darmstadt

On a posteriori error estimates for numerical approximations of systems of hyperbolic conservation laws

Abstract:

We review the state of the art in a posteriori error estimates for systems of hyperbolic conservation laws. These are error bounds that can be explicitly computed from the numerical solution so that they provide an error control. In addition, localized versions of them provide a basis for mesh adaptation.

This talk is going to emphasize and explain the link between a posteriori error estimates and (quantitative) stability properties of the underlying PDEs. We will mostly focus on two recently developed methodologies for deriving a posteriori estimates in one space dimension. We will explain in detail that it is much more challenging to obtain L^2 -in-space error estimates than L^1 -in-space-error estimates due to the high sensitivity of the former with respect to errors in shock positions and to shocks being smeared out.

room 40.03.003 (Emil Fischer Str. 40)

Thursday, Aug 29 at 1:00 pm

Zu diesem Vortrag sind Sie herzlich eingeladen.

gez. Christian Klingenberg