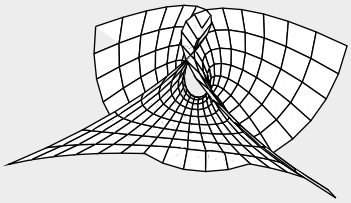

Oberseminar Mathematische Strömungsmechanik

Institut für Mathematik der Julius-Maximilians-Universität Würzburg

Wasilij Barsukow

CNRS & Université de Bordeaux, France

Evolution operators for nonlinear conservation laws

Abstract:

The traditional Active Flux method uses evolution operators to update the point values. The very first such method (van Leer, 1977) had no trouble using even an *exact* evolution operator, as the equation under consideration was linear and in one spatial dimension. Using characteristic theory, it is not difficult to write down an approximate evolution operator for Burgers' equation (or, in fact, for any scalar conservation law). It amounts to a fixpoint iteration on the location of the foot of the characteristic. However, for nonlinear systems in 1-d, an immediate application of this approach for each characteristic variable fails. This is because characteristics are no longer straight lines.

In this lecture we shall discuss possible approaches to obtain high-order evolution operators for nonlinear systems in 1-d and current challenges.

room 40.03.003 (Emil Fischer Str. 40)

Thursday, Nov. 7 at 12:30 pm

Zu diesem Vortrag sind Sie herzlich eingeladen.

gez. Christian Klingenberg