FAKULTÄT FÜR MATHEMATIK, INFORMATIK UND PHYSIK
UNIVERSITÄT INNSBRUCK
INSTITUT FÜR MATHEMATIK

Technikerstraße 13
A-6020 Innsbruck
Telefon: +43 512 507 53801 oder 53802

E-Mail: mathematik@uibk.ac.at
http://www.uibk.ac.at/mathematik/
Fax: +43 512 507 53899

GASTVORTRAG

Das Institut für Mathematik lädt zu folgendem Vortrag im Rahmen des Forschungsseminars: Numerische Mathematik – aktuelle Forschung ein:

Alexander Kurganov

Department of Mathematics, Tulane University, New Orleans

über

Central-Upwind Schemes for Shallow Water Models

I will describe Riemann-problem-solver-free non-oscillatory central-upwind schemes for hyperbolic systems of conservation laws and show how these schemes can be extended to hyperbolic systems of balance laws. I will focus on the Saint-Venant system and related shallow water models. The main difficulty in this extension is preserving a delicate balance between the flux and source terms. This is especially important in many practical situations, in which the solutions to be captured are (relatively) small perturbations of steady-state solutions. The other crucial point is preserving positivity of the computed water depth (and/or other quantities, which are supposed to remain nonnegative). I will present a general approach of designing well-balanced positivity preserving central-upwind schemes and illustrate their performance on a number of shallow water models.

Zeit: **Montag, den 23. März 2015 um 17:15 Uhr**

Ort: **Bauing.-Gebäude, Technikerstraße 13, HSB 6**

Gäste sind herzlich willkommen!

Alexander Ostermann