INSTITUT FÜR MATHEMATIK

Fakultät für Mathematik, Informatik und Physik

universität innsbruck

Technikerstraße 13/7
A-6020 Innsbruck
Telefon: +43 512 507 53801

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

GASTVORTRAG

Die Arbeitsgruppe Numerical Analysis lädt zu folgendem Vortrag ein:

Christian Klein
University of Burgundy, Dijon, France

Nonlinear dispersive PDEs – analytical and numerical challenges

Nonlinear dispersive PDEs are omnipresent in applications wherever dispersion dominates dissipation. Also from a mathematical point of view, it is interesting to study the "competition" of dispersion and nonlinearity:

- solitons: particle like localised solutions which also exist in non-integrable equations; they are conjectured to appear in the longtime behavior of solutions to the respective equations if the solitons are stable.

- dispersive shock waves: in the limit of small dispersion, rapid modulated oscillations can appear near the shocks of the corresponding dispersionless equations; a correct asymptotic and numerical description of the oscillations is challenging.

- blow-up: solutions to L^2 critical and supercritical equations can exhibit a loss of regularity (blow-up) in finite time; an asymptotic and numerical description of a blow-up by dynamical rescaling is a demanding task.

We discuss examples from the family of Korteweg-de Vries and nonlinear Schrödinger equations.

Zeit: **Mittwoch, 18. Dezember 2019 um 11:00 Uhr**

Ort: **Technikerstraße 13a, HSB 6**

Gäste sind herzlich willkommen!

Alexander Ostermann