Universität
Konstanz

Fachbereich Mathematik und Statistik

Prof. Dr. R. Racke, Prof. Dr. O. Schnürer

Wir laden recht herzlich zu einem Vortrag im Rahmen des

Oberseminars Partielle Differentialgleichungen

ein:

Prof. Dr. Mauricio Sepúlveda

(University of Concepción)

"Stability analysis of numerical method for damped dispersive equations"

Donnerstag, 14. Juni 2018

Beginn: **15.15 Uhr**
Raum: **F426**
Interessenten sind herzlich willkommen!

R. Racke, O. Schnürer

Zusammenfassung: Dispersion is the phenomenon in which the phase velocity of a wave depends on its frequency, or alternatively when the group velocity depends on the frequency. Examples of classical nonlinear dispersive equations are the (generalized) KdV equation, the Nonlinear Schrödinger equation, and the Boussinesq equation. In addition to the well-posedness it is known a blow-up effect, for critical and super-critical cases that generally depend on the exponent $p > 0$ present in the nonlinearity of these equations. Dispersive blow-up is a focussing type of behavior which is due to both the unbounded domain in which the problem is set and the propensity of the dispersion relation to propagate energy at different speeds. On the other hand, a damping term can prevent this blow-up effect in the dispersive equations, and it is what is studied in several works, both for the KdV and for the Schrödinger equation.

(invited by Prof. Dr. Reinhard Racke)