Universität
Konstanz

Fachbereich Mathematik und Statistik

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

Im

Oberseminar Partielle Differentialgleichungen

gibt es am

Donnerstag, dem 2. November 2017,

einen Vortrag von Herrn

Prof. Dr. Reinhard Racke

(Universität Konstanz)

"Global solutions to nonlinear thermoelastic plate equations "

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

R. Denk, R. Racke, O. Schnürer

Abstract:We consider the Cauchy problem in $\mathbb{R}^n$ for some nonlinear thermoelastic Kirchhoff type plate equations where heat conduction is modeled by either the Cattaneo law or by the Fourier law. Additionally, we take into account possible inertial effects. Considering nonlinearities which are of fourth-order in the space variable, we deal with a nonlinear system which triggers difficulties typical for nonlinear Schrödinger equations. The different models considered are systems of mixed type comparable to Schrödinger–parabolic or Schrödinger–hyperbolic systems. The main task consists in proving sophisticated a priori estimates with the achievement of obtaining the global existence of solutions for small data, neither known nor expected for the Cauchy problem in pure plate theory nor available before for the coupled system under investigation, where only special cases (bounded domains with analytic semigroup setting, or the Cauchy problem with semilinear nonlinearities) had been treated before.