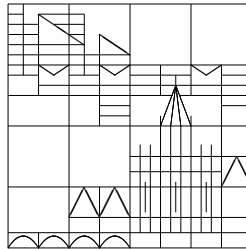


Universität Konstanz
Fachbereich
Mathematik und Statistik



Prof. Dr. Robert Denk

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Konstanz, den 10. Dezember 2010

Im
Oberseminar Partielle Differentialgleichungen
wird am
Donnerstag, dem 16. Dezember 2010,
folgender Vortrag gehalten:

Dr. Belkacem Said-Houari (Universität Konstanz):
„Asymptotic behavior of some systems of wave and viscoelastic wave equations“

Zeit: 14:15 Uhr

Raum: F 426

Interessenten sind herzlich willkommen!

R. Denk, R. Racke, O. Schnürer

Abstract: In this talk, we consider a system of wave equations and viscoelastic wave equations.

First, we treat a system of nonlinear wave equations with nonlinear damping and source terms acting in both equations. We prove that the solution of our considered system blows up in finite time provided that the initial data are large enough. On the other hand, we show that if the initial data is small enough, the the solution of our problem exists globally. Moreover, we show that the solution decays exponentially to zero if the damping is linear and polynomially if the damping is nonlinear.

Second, we extend the above result to a system of viscoelastic wave equations and under an appropriate conditions on the relaxation functions, we prove some general decay estimates in which the exponential and polynomial decay rates are only particular cases.

Finally, we illustrate our result with some examples.

(invited by Reinhard Racke)