



Wir laden recht herzlich zu einem Vortrag im Rahmen des

Oberseminars Partielle Differentialgleichungen

ein:

MSc Lisa Fischer

(Universität Konstanz)

“Generalized Thermoelastic Plates: Frequency analysis and modified systems”

Donnerstag, 14. Mai 2020

Beginn: **15:15 Uhr**

Link zur **Videokonferenz**:

<https://zoom.us/j/95144822777?pwd=aHYyWmRqWUIQNWI5ZXMzd25OSHBUZz09>

Meeting-ID: 951 4482 2777

Passwort: 703702

Interessenten sind herzlich willkommen!

R. Denk, H. Freistühler, R. Racke, O. Schnürer

Zusammenfassung: We consider linear generalized thermoelastic plate equations.

For parameters $(\alpha, \beta, \gamma) \in [0, 1] \times [0, 1] \times (0, 1]$ we analyse systems of the form

$$\begin{aligned}(I + \mu A^\gamma)u_{tt} + Au - A^\alpha \theta &= 0, \\ \theta_t + A^\beta \theta + A^\alpha u_t &= 0,\end{aligned}$$

with initial conditions

$$u(0) = u_0, u_t(0) = u_1(x), \theta(0) = \theta_0(x),$$

where A is a self-adjoint, non-negative operator on a separable Hilbert space H .

We study the frequency behaviour of solutions via diagonalization of the operator A and eigenvalue expansions.

Moreover, we want to consider the two modified systems

$$\begin{aligned}u_{tt} + \mu A^\gamma u_{tt} + Au - A^{\alpha_1} \theta &= 0, \\ \theta_t + A^\beta \theta + A^{\alpha_2} u_t &= 0,\end{aligned}$$

for $\alpha_1, \alpha_2, \beta \in [0, 1]$ with $\alpha_1 \neq \alpha_2$, and $\gamma \in (0, 1]$ and

$$\begin{aligned}u_{tt} + \mu A^\gamma u_{tt} + Au - A^\alpha \theta + A^\delta u_t &= 0, \\ \theta_t + A^\beta \theta + A^\alpha u_t &= 0,\end{aligned}$$

and give well-posedness results and also frequency analysis results.