Universität Konstanz

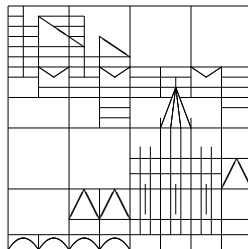**Fachbereich
Mathematik und Statistik**

Prof. Dr. Robert Denk

Prof. Dr. Reinhard Racke

Prof. Dr. Oliver Schnürer
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Konstanz, den 8. November 2010

Im

Oberseminar Partielle Differentialgleichungen

wird am

Donnerstag, dem 11. November 2010,

folgender Vortrag gehalten:

Karoline Götze (TU Darmstadt):
"Strong solutions for the free movement of a rigid body in a viscoelastic fluid"

Zeit: 14:15 Uhr

Raum: F 426

Interessenten sind herzlich willkommen!

R. Denk, R. Racke, O. Schnürer

Abstract: The free movement of a rigid body in a viscoelastic fluid can be modelled by the Navier-Stokes-equations, including an extra viscoelastic stress, and the balances of momenta for the rigid body. We show the existence of local-in-time strong solutions for this coupled problem, using maximal regularity estimates for the linearized Newtonian system. The full system can be treated by mixed Banach and Schauder fixed point arguments. A motivation for studying this problem lies in the fact that the interaction of fluid and rigid body differs strongly in the Newtonian and the non-Newtonian cases.

(invited by Prof. Dr. Denk)