



Im

Oberseminar Partielle Differentialgleichungen

gibt es am

**Donnerstag, dem 06. Juli 2017,**

einen Vortrag von Herrn

**PD Dr. Axel Grünrock**

(Heinrich-Heine-Universität Düsseldorf)

*“On the Cauchy Problem for the generalized Zakharov-Kuznetsov equation ”*

Beginn: **15.15 Uhr**

Raum: **F426**

Interessenten sind herzlich willkommen!

R. Denk, R. Racke, O. Schnürer

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**Abstract:** The Zakharov-Kuznetsov equation (ZK) is a higher dimensional analogue of the famous Korteweg-de Vries equation (KdV). For three space dimensions this equation was derived in 1974 by Zakharov and Kuznetsov as a model for the propagation of sound waves in a magnetized plasma. We consider the Cauchy Problem in  $R^n$ ,  $n = 2, 3$ , for a generalisation of (ZK) to higher integer powers. The data are assumed to belong to the classical (homogeneous) Sobolev spaces  $H^s$  or, more generally, to the corresponding Besov spaces. For data of critical regularity local well-posedness and small data global well-posedness can be obtained. The proof relies substantially on the Kato-smoothing effect and a maximal function estimate for solutions of the homogeneous linear equation.