



universität
wien

Fakultät für Mathematik

Mathematisches Kolloquium

Mittwoch, 27. März 2019

Sky Lounge

EINLADUNG

Barbara Kaltenbacher

(Univ. Klagenfurt)

„Nonlinear Acoustic Waves: Modeling - Numerics - Optimization“

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Abstract:

High intensity (focused) ultrasound HIFU is used in numerous medical and industrial applications ranging from lithotripsy and thermotherapy via ultrasound cleaning and welding to sonochemistry. We will highlight certain mathematical and computational aspects related to the relevant nonlinear acoustic phenomena, namely - modeling of high intensity ultrasound phenomena as second and higher order wave equations

- efficient and robust time integration
- absorbing boundary conditions for the treatment of open domain problems
- optimal shape design and boundary control problems in the context of HIFU

15.45 Uhr: Kaffeejause

16.15 Uhr: Vortrag

vinum cum pane im Anschluss

Christian Krattenthaler