TECHNISCHE UNIVERSITÄT WIEN
Vienna University of Technology

Institute for Analysis and Scientific Computing, and Doctoral Program "Dissipation and Dispersion in Nonlinear PDEs"

Course Announcement:

Weak & Strong Compactness and its Applications to Nonlinear Evolution PDES

by
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Overview:

Many phenomena in physics, chemistry and biology can be modeled by some nonlinear evolution PDEs (the time dependent nonlinear partial differential equations). Because of the strong nonlinearities in some of them, even if the existence of global weak solutions are nontrivial. My intention in this course is to explain systematically the compactness methods for studying them.

Brief Syllabus:

- *Basic facts concerning weak convergence and weak compactness for functions and measures.*
- *Strong compactness in Lp(0,T;B) spaces (i.e. Aubin-Lions-Dubinskii lemmas).*
- *Application to porous media/fast diffusion equations.*
- *Application to reaction-dissusion equations.*

Location and times:

Monday,Thurday,Friday (13/11-11/12)
14:30-16:00 at Sem.R. DA grün 06B
Tuesday (12/12)
15:00-16:30 at FH Hörsaal 3