LEHRSTUHL I FÜR MATHEMATIK
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RWTH AACHEN UNIVERSITY

Einladung zum Oberseminar

Young measures on invertible matrices

Sprecher: **Barbora Benesova**
Charles University Prague

Zeit: **Dienstag, 3. Juli 2012**
11:00 Uhr

Ort: **SG 11** (Seminargebäude, Wüllnerstr. 5b)

Inhalt/Abstract:
Motivated by variational problems in nonlinear elasticity depending on the deformation gradient and its inverse, we completely and explicitly describe Young measures generated by matrix-valued mappings $\{Y_k\}_{k\in\mathbb{N}} \subset L^p(\mathbb{O};\mathbb{R}^{n\times n})$, $\mathbb{O}\subset\mathbb{R}^n$, such that $\{Y_k^{-1}\}_{k\in\mathbb{N}} \subset L^p(\mathbb{O};\mathbb{N}^{n\times n})$ is bounded, too. Moreover, the constraint $\det Y_k > 0$ can be easily included and is reflected in a condition on the support of the measure. This condition typically occurs in problems of nonlinear-elasticity theory for hyperelastic materials if $Y := \nabla y$ for $y \in W^{1,p}(\mathbb{O};\mathbb{R}^n)$. Then we fully characterize the set of Young measures generated by gradients of a uniformly bounded sequence in $W^{1,\infty}$ where the inverted gradients are also bounded in L^∞. This extends the original results due to D. Kinderlehrer and P. Pedregal.

Interessierte sind herzlich eingeladen.