Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Fakultät für Mathematik, Informatik
und Naturwissenschaften
Fachbereich Mathematik

Lothar-Collatz-Kolloquium für Angewandte Mathematik

Donnerstag, den 2. Februar 2017, um 17:15 Uhr, im Hörsaal 5

Prof. Dr. Ricardo H. Nochetto *
(University of Maryland, USA)

Bilayer Plates: Model Reduction, Discretization and Gradient Flow

Zusammenfassung/Abstract:

The bending of bilayer plates is a mechanism which allows for large deformations via small externally induced lattice mismatches of the underlying materials. Its mathematical modeling, discussed in this talk, consists of a nonlinear fourth order problem with a pointwise isometry constraint. A discretization based on Kirchhoff quadrilaterals is devised and its Γ-convergence is proved. A discrete gradient flow that decreases the energy is proposed and its convergence to stationary configurations is investigated. Its performance, as well as reduced model capabilities, are explored via several insightful numerical experiments involving large (geometrically nonlinear) deformations and thermal actuation. This is joint work with S. Bartels and A. Bonito.

Kontakt:
Prof. Dr. Michael Hinze
Optimierung und Approximation
Raum 115, Tel.: 040 42838-4079
E-Mail: michael.hinze@uni-hamburg.de
Web: http://www.math.uni-hamburg.de/home/hinze/

* **Prof. Dr. Ricardo H. Nochetto**
University of Maryland,
Department of Mathematics, College Park, MD 20742-4015
USA
E-Mail: rhn@math.umd.edu
Web: http://www.math.umd.edu/~rhn/

Die aktuelle Version der Kolloquiumsankündigungen (inkl. Abstracts) finden Sie unter:

http://www.math.uni-hamburg.de/spag/angmath/kolloq/

Stand: 19.01.2017 (Katrin Kopp)