

Table of contents

In: Jan Chleboun and Petr Prikryl and Karel Segeth (eds.): Programs and Algorithms of Numerical Mathematics, Proceedings of Seminar. Dolní Maxov, June 6-11, 2004. Institute of Mathematics AS CR, Prague, 2004. pp. 3-5.

Persistent URL: <http://dml.cz/dmlcz/702769>

Terms of use:

© Institute of Mathematics AS CR, 2004

Institute of Mathematics of the Czech Academy of Sciences provides access to digitized documents strictly for personal use. Each copy of any part of this document must contain these *Terms of use*.



This document has been digitized, optimized for electronic delivery and stamped with digital signature within the project *DML-CZ: The Czech Digital Mathematics Library*
<http://dml.cz>

Contents

Preface	7
<i>Marek Brandner, Stanislav Míka</i> On the approximation of the non-autonomous non-linear Riemann problem	9
<i>Pavel Burda, Jaroslav Novotný, Bedřich Sousedík, Jakub Šístek</i> A priori and a posteriori error estimates for Navier-Stokes equations applied to incompressible flows	24
<i>Josef Daněk</i> Using domain decomposition method for the stress-strain analysis of the artificial joint replacements	34
<i>Michal Dostál</i> Numerical methods for MHD problems	41
<i>Miloslav Feistauer, Vít Dolejší</i> Discontinuous Galerkin method for compressible flow and conservation laws	47
<i>Cyril Fischer</i> Matrix-free formulation of the stochastic Newmark method	63
<i>Milan Hokr, Vladimír Wasserbauer</i> Finite element method on 3D mesh with layer structure – application on flow and transport in porous media	70
<i>Radek Honzátka, Jaromír Horáček, Karel Kozel</i> Numerical solution of inviscid incompressible flow in a channel with dynamical effects	76
<i>Jan Chleboun, Petr Kocna</i> On cumulative ^{13}C breath tests: An effort to improve the accuracy of test results revealed a substantial uncertainty in input data	82
<i>Pavol Chocholatý</i> Numerical treatment of initial value problems for delay differential systems	88
<i>Radka Keslerová, Karel Kozel</i> Numerical solution of 2D and 3D incompressible laminar flows through a branching channel	94
<i>Jiří Kobza</i> Contribution to construction of global cubic C^1 or C^2 -spline on equidistant knotset	102

<i>Roman Kohut</i>	
Solution of transient problems of thermoelasticity	108
<i>Tomáš Kojecký, Petr Mayer</i>	
A modification of a class of IAD methods	116
<i>Radek Kučera</i>	
Complexity and memory requirements of an algorithm for solving saddle-point linear systems with singular blocks	131
<i>Václav Kučera</i>	
The discontinuous Galerkin method for low-Mach flows	136
<i>Martin Lazar</i>	
Parallel implementation of an algorithm of the first-order projection method for solving viscous incompressible fluid flow	143
<i>Vladimír Lukeš, Eduard Rohan, Robert Cimrman</i>	
Computational algorithm for homogenized coefficients of hyperelastic heterogeneous materials undergoing large deformations	149
<i>Ladislav Lukšan, Jan Vlček</i>	
Software system for universal functional optimization	155
<i>Ctirad Matonoša</i>	
Nonlinear optimization problem	162
<i>Zuzana Morávková</i>	
The problem with bilateral contact and nonmonotone friction	169
<i>Vratislava Mošová</i>	
Bézier curves and their applications	174
<i>Jan Nejedlý, Roman Vaibar</i>	
Numerical simulation of the two-phase flow through the energetical equipment	180
<i>Tomáš Neustupa</i>	
Analysis of incompressible flow through a cascade of profiles	186
<i>Vladimír Prokop, Karel Kozel</i>	
Numerical solution of steady and unsteady bypass flow	191
<i>Jana Přívratská, Oldřich Jirsák, R. Bharanitharan</i>	
Maxwell-Kelvin model for highloft materials	196
<i>Jakub Slovan</i>	
Conservative method for a moving boundary problem with kinetic condition ...	200

<i>Petr Sváček</i>	
On stabilized finite element method in problems of aeroelasticity	206
<i>Jan Šípek, Jan Zítko</i>	
Alternating iterative scheme for the solution of block-structured systems	214
<i>Pavel Šolín, Karel Segeth</i>	
Three ways of interpolation on finite elements	230
<i>Karel Švadlenka</i>	
Discontinuous Galerkin method of lines for solving nonstationary singularly perturbed linear problems	242
<i>Jiří Vala</i>	
Modelling of heat and moisture propagation in building structures	248
<i>Tomáš Vejchodský</i>	
Fast and guaranteed a posteriori error estimator	257
<i>Jan Vlček, Ladislav Lukšan</i>	
Variationally-derived limited-memory methods for unconstrained optimization ..	273
<i>Vítězslav Vít Vlček</i>	
How to use level set methods in computer tomography	279
<i>Vít Vondrák, Zdeněk Dostál, Michael Damsgaard, John Rasmussen</i>	
Solution of muscle-bone contact problem in biomechanics	284
List of Participants	290

