

Table of contents

In: Jan Chleboun and Petr Přikryl and Karel Segeth and Jakub Šístek and Tomáš Vejchodský (eds.): Programs and Algorithms of Numerical Mathematics, Proceedings of Seminar. Dolní Maxov, June 8-13, 2014. Institute of Mathematics AS CR, Prague, 2015. pp. 3–5.

Persistent URL: <http://dml.cz/dmlcz/702654>

Terms of use:

© Institute of Mathematics AS CR, 2015

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>Monika Balázsová, Miloslav Feistauer, Martin Hadrava, Adam Kosík</i> Stability analysis of the space-time discontinuous Galerkin method for nonstationary nonlinear convection-diffusion problems	9
<i>Stanislav Bartoň, Michal Petřík</i> Envelope construction of two-parameteric system of curves in the technological practice	17
<i>Bohumír Bastl, Marek Brandner, Jiří Egermaier, Kristýna Michálková, Eva Turnerová</i> Isogeometric analysis for fluid flow problems	23
<i>Pavel Burda, Martin Hasal</i> An a posteriori error estimate for the Stokes-Brinkman problem in a polygonal domain	32
<i>Dana Černá, Václav Finěk, Martina Šimůnková</i> Quantitative properties of quadratic spline wavelet bases in higher dimensions ..	41
<i>Marta Čertíková, Jakub Šístek, Pavel Burda</i> Different approaches to interface weights in the BDDC method in 3D	47
<i>Jan Chleboun, Karel Mikeš</i> Identification of parameters in initial value problems for ordinary differential equations	58
<i>Jiří Eckstein, Jan Zítka</i> Comparison of algorithms for calculation of the greatest common divisor of several polynomials	64
<i>Cyril Fischer, Ondřej Fischer, Ladislav Frýba</i> Numerical modelling of a bridge subjected to simultaneous effect of a moving load and a vertical seismic ground excitation	71
<i>Martin Hanek, Jakub Šístek, Pavel Burda</i> An application of the BDDC method to the Navier-Stokes equations in 3-D cavity	77
<i>Ivan Horňák, Jan Příkrýl</i> Experimental comparison of traffic flow models on traffic data	86
<i>Petra Jarošová</i> Computational approaches to the design of low-energy buildings	92

<i>Radka Keslerová, Karel Kozel</i> Numerical modelling of viscous and viscoelastic fluids flow through the branching channel	100
<i>Jiří Khun, Ivan Šimeček</i> Parallelization of artificial immune systems using a massive parallel approach via modern GPUs	106
<i>Jiří Krček, Jaroslav Vlček</i> Tangential fields in mathematical model of optical diffraction	112
<i>Lukáš Krupička, Michal Beneš</i> An asynchronous three-field domain decomposition method for first-order evolution problems	118
<i>Václav Kučera, Andrea Živčáková</i> Numerical solution of a new hydrodynamic model of flocking	124
<i>Ladislav Lukšan, Jan Vlček</i> Nonlinear conjugate gradient methods	130
<i>Ondřej Mařík, Ivan Šimeček</i> Acceleration of Le Bail fitting method on parallel platforms	136
<i>Karel Mikeš</i> Comparison of crack propagation criteria in linear elastic fracture mechanics ..	142
<i>Jaroslav Mlýnek, Radek Srb, Roman Knobloch</i> The use of graphics card and nVidia CUDA architecture in the optimization of the heat radiation intensity	150
<i>Vratislava Mošová</i> Wavelets and prediction in time series	156
<i>Štěpán Papáček, Jiří Jablonský, Ctirad Matonoha</i> On two methods for the parameter estimation problem with spatio-temporal FRAP data	163
<i>Jan Pech</i> 2D simulation of flow behind a heated cylinder using spectral element approach with variable coefficients	169
<i>Lukáš Pospíšil, Zdeněk Dostál</i> Minimization of a convex quadratic function subject to separable conical constraints in granular dynamics	175
<i>Petra Rozehnalová, Anna Kučerová, Petr Štěpánek</i> Processes in concrete during fire	181

<i>Vojtěch Rybář, Tomáš Vejchodský</i>	
Irregularity of Turing patterns in the Thomas model with a unilateral term ...	188
<i>Karel Segeth</i>	
Smooth approximation spaces based on a periodic system	194
<i>Ilona Škarydová, Milan Hokr</i>	
Solution of mechanical problems in fractured rock with the user-defined interface of COMSOL Multiphysics	200
<i>Petr Sváček</i>	
Numerical simulation of free-surface flows with surface tension	207
<i>Jiří Vala</i>	
Computational approaches to some inverse problems from engineering practice	215
<i>Miloslav Vlasák, Filip Roskovec</i>	
On Runge–Kutta, collocation and discontinuous Galerkin methods: mutual connections and resulting consequences to the analysis	231
<i>Jan Vlček, Ladislav Lukšan</i>	
A modified limited-memory BNS method for unconstrained minimization derived from the conjugate directions idea	237
List of participants	244