

Contents

Preface	i
List of Publications of Karel Segeth	v
<i>J. Brandts, A. Cihangir</i> Counting triangles that share their vertices with the unit n -cube	1
<i>P. Burda, J. Novotný, J. Šístek</i> Analytical solution of rotationally symmetric Stokes flow near corners	13
<i>R. Castelli, J.-P. Lessard</i> A method to rigorously enclose eigenpairs of complex interval matrices	21
<i>V. Dolejší</i> hp -anisotropic mesh adaptation technique based on interpolation error estimates	32
<i>I. Faragó</i> Convergence and stability constant of the theta-method	42
<i>L. Farina, J. S. Ziebell</i> Solutions of hypersingular integral equations over circular domains by a spectral method	52
<i>P. Fraňková, M. Hanuš, H. Kopincová, R. Kužel, P. Vaněk, Z. Vastl</i> A short philosophical note on the origin of smoothed aggregations	67
<i>U. Garibaldi, T. Radivojević, E. Scalas</i> Interplay of simple stochastic games as models for the economy	77
<i>L. Gerardo-Giorda</i> Numerical approximation of density dependent diffusion in age-structured population dynamics	88
<i>A. Gil, J. Segura, N. M. Temme</i> On the computation of moments of the partial non-central chi-square distribution function	98
<i>J. Haslinger, V. Janovský, R. Kučera</i> Path-following the static contact problem with Coulomb friction	104
<i>J. Hrabě</i> Fast optical tracking of diffusion in time-dependent environment of brain extracellular space	117

<i>L. Kárná, Š. Klapka</i> Detection codes in railway interlocking systems	124
<i>S. Korotov, M. Křížek</i> On simplicial red refinement in three and higher dimensions	131
<i>Y. Li, Q. Lin, H. Xie</i> A Parallel method for population balance equations based on the method of characteristics	140
<i>J. Mlýnek, R. Srb</i> Parallel programming and optimization of heat radiation intensity	150
<i>V. Mořová</i> Integral transforms – the base of recent technologies	158
<i>G. Opfer, D. Janovská</i> Zero points of quadratic matrix polynomials	168
<i>V. Podsechin, G. Schernewski</i> Finite element modelling of flow and temperature regime in shallow lakes	177
<i>J. Považan, B. Riečan</i> Fuzzy sets and small systems	185
<i>L. Remaki</i> Riemann solution for hyperbolic equations with discontinuous coefficients	188
<i>P. Sváček, J. Horáček</i> On mathematical modelling of gust response using the finite element method ..	197
<i>M. -B. Tran</i> On domain decomposition methods for optimal control problems	207
<i>J. Vala</i> On the computational identification of temperature-variable characteristics of heat transfer	215
<i>T. Vejchodský</i> A direct solver for finite element matrices requiring $O(N \log N)$ memory places	225
<i>P. Zhu</i> Spherically symmetric solutions to a model for interface motion by interface diffusion	240
<i>Z. Zlatev, I. Dimov, I. Faragó, K. Georgiev, Á. Havasi, Tz. Ostrowsky</i> Application of Richardson Extrapolation with the Crank–Nicolson scheme for multi-dimensional advection	248

List of authors	257
List of participants	258
Program of the conference	261