



Personální obsazení:

Profesoři	Josef Diblík, Jiří Vala
Docenti	Irena Hinterleitner, Jiří Novotný, Alena Vanžurová
Odborní asistenti	Darina Brothánková, Jana Bulantová, Hana Halfarová, Jan Holešovský, Jana Hřebíčková, Veronika Chrastinová, Helena Koutková, Karel Mikulášek, Blanka Morávková, Radko Odehnal, Šárka Pechanecová, Květoslava Prudilová, Petra Rozehnalová, Rudolf Schwarz, Jana Slaběňáková, Hana Šafářová, Pavel Špaček, Jan Vondra, Lucie Zrůstová
Asistenti	Eva Jansová, Kateřina Konečná, Kristýna Mencáková, Oto Přibyl, Jan Šafařík
Technicko-hospodářští pracovníci	Jarmila Janochová, Alena Vlčková
Externí zaměstnanci	Oldřich Dlouhý, Václav Tryhuk

Články v časopisech:

1. DIBLÍK, J.; HALFAROVÁ, H.; ŠAFÁŘÍK, J. Conditional stability and asymptotic behavior of solutions of weakly delayed linear discrete systems in \mathbb{R}^2 . *Discrete Dynamics in Nature and Society* 2017 (2017), 1–10. ISSN 1607-887X.
2. DIBLÍK, J. Positive solutions of nonlinear delayed differential equations with impulses. *Applied Mathematics Letters* 72/10 (2017). ISSN 0893-9659.
3. HINTERLEITNER, I.; MIKEŠ, J.; PEŠKA, P. Fundamental Equations of F-Planar Mappings. *Lobachevskii Journal of Mathematics* 38/4 (2017), 653–659. ISSN 1995-0802.
4. HINTERLEITNER, I.; CEPURNA, O.; BEREZOVSKI, V.; MIKEŠ, J. On the concircular vector fields of spaces with affine connection. *Acta Mathematica Academiae Paedagogicae Nyiregyhaziensis* 33/1 (2017), 53–60. ISSN 0866-0182.
5. HOBST, L.; VALA, J. K možnostem nedestruktivního vyšetřování materiálových vlastností drátkobetonu. *TZB-info* 2017/4 (2017), H1–H5. ISSN 1801-4399.
6. HOBST, L.; VALA, J. Ověřování materiálových vlastností drátkobetonu. *TZB-info* 2017/3 (2017), H1–H4. ISSN 1801-4399.
7. CHRASTINOVÁ, V.; TRYHUK, V. On the exact inverse problem of the calculus of variations. *Advances in Analysis* 2/3 (2017), 196–218. ISSN: 2518-3680.
8. CHRASTINOVÁ, V.; TRYHUK, V. On the internal approach to differential equations, 2. The controllability structure. *Mathematica Slovaca* 67/4 (2017), 1011–1030. ISSN 0139-9918.
9. CHRASTINOVÁ, V.; TRYHUK, V. On the internal approach to differential equations 3. Infinitesimal symmetries. *Mathematica Slovaca* 66/6 (2017), 1459–1474. ISSN 0139-9918.

10. CHRASTINOVÁ, V.; TRYHUK, V. Report on the absolute differential equations I. *Advances in Analysis* 2/1 (2017), 41–61. ISSN 2518-3680.
11. MATUŠÍKOVÁ, A.; ROZEHNALOVÁ, P.; GIRGLE, F.; KOSTIHA, V.; ŠTĚPÁ-NEK, P. An engineering heat and mass transport model utilized for concrete at fire. *Key Engineering Materials* 738 (2017), 58–68. ISSN 1662-9795.
12. VANŽUROVÁ, A.; MIKEŠ, J. Reconstruction of an affine connection in generalized Fermi coordinates. *Bulletin of the Malaysian Mathematical Sciences Society* 40/1 (2017), 205–213. ISSN 0126-6705.
13. PAZDERA, L.; TOPOLÁŘ, L.; DANĚK, P.; SMUTNÝ, J.; MIKULÁŠEK, K. Evaluation of acoustic emission events generated at three point bending of different concrete specimens by spectral analysis. *Solid State Phenomena* 258 (2017), 485–488. ISSN 1012-0394.
14. PAZDERA, L.; TOPOLÁŘ, L.; MIKULÁŠEK, K.; SMUTNÝ, J.; SEELMANN, H. Non-linear characteristics of temperature degraded concrete at high temperature. *Procedia Engineering: Structural and Physical Aspects of Construction Engineering* 2017 (2017), 100–105. ISSN 1877-7058.
15. ŠŤASTNÍK, S.; VALA, J.; MAJSNIAR, M.; ŠOT, F. Influence of degradation of surface layer of light-weighted panels on its sunray absorptance. *Materials Science Forum* 908 (2017), 129–133. ISSN 1662-9752.
16. TOPOLÁŘ, L.; PAZDERA, L.; KUCHARCZYKOVÁ, B.; SMUTNÝ, J.; MIKULÁŠEK, K. Using acoustic emission methods to monitor cement composites during setting and hardening. *Applied Sciences* 7/5 (2017), 1–11. ISSN 2076-3417.
17. VALA, J. Existence and convergence questions in computational modelling of crack growth in brittle and quasi-brittle materials. *Solid State Phenomena* 258 (2017), 157–160. ISSN 1012-0394.
18. VANŽUROVÁ, A.; MIKEŠ, J. Reconstruction of an affine connection in generalized Fermi coordinates. *Bulletin of the Malaysian Mathematical Sciences Society* 40 (2017), 205–213. ISSN 0126-6705.

Články v konferenčních sbornících:

1. BENADA, L.; KONEČNÁ, K. Application of hedging on natural gas prices. 16th *Applimat (Conference on Applied Mathematics)* in Bratislava (2017). Spektrum STU, Bratislava, 2017, 115–125. ISBN 978-80-227-4650-2.
2. DIBLÍK, J.; VÁŽANOVÁ, G. Positive solutions of a differential equation $\dot{y}(t) = -c(t)y(t - \tau(t, y(t)))$. *CDDEA Conference Abstracts* in Poznan (2017), 17. Poznan University of Technology, 2017. ISBN 978-83-7775-466-5.
3. DIBLÍK, J.; HALFAROVÁ, H. Weakly delayed linear systems with variable coefficients. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, #DiH/1–16. ISBN 978-80-7231-417-1.
4. DIBLÍK, J.; MENCÁKOVÁ, K. Representation of solutions of higher-order linear discrete systems. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, #DiM/1–9. ISBN 978-80-7231-417-1.
5. HALFAROVÁ, H.; DIBLÍK, J. General solution of weakly delayed linear systems with variable coefficients. *MITAV (Mathematics, Information Technologies and Applied*

- Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 63–76. ISBN 978-80-7582-026-6.
6. HINTERLEITNER, I.; MIKEŠ, J. Geodesic mappings onto Riemannian manifolds and differentiability. 18th *International Conference on Geometry, Integrability and Quantization* in Sofia, 2016. Bulgarian AS, Sofia, 2017. ISSN 1314-3247.
 7. HINTERLEITNER, I. Composition of conformal and geodesic mappings. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, #Hi/1-7. ISBN 978-80-7231-417-1.
 8. HINTERLEITNER, I. Some properties of compositions of conformal and geodesic mappings. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 98–104. ISBN 978-80-7582-026-6.
 9. HINTERLEITNER, I.; MIKEŠ, J.; GUSEVA, N. On conformal mappings onto compact Einstein spaces. 16th *Aplimat (Conference on Applied Mathematics)* in Bratislava (2017). Spektrum STU, Bratislava, 2017, 1050–1056. ISBN 978-80-227-4650-2.
 10. HINTERLEITNER, I. On 4-planar mappings onto almost quaternionic hermitian 16th *Aplimat (Conference on Applied Mathematics)* in Bratislava (2017). Spektrum STU, Bratislava, 2017, 1050–1056. ISBN 978-80-227-4650-2.
 11. HODULÁKOVÁ, M.; PAZDERA, L.; TOPOLÁŘ, L.; ROTH, O.; OROLÍN, P.; MIKULÁŠEK, K. Pilotní studie chování cyklicky zatěžovaného betonového nosníku metodou akustické emise. *Defektoskopie / NDE for safety* in Chomutov, 2017. Česká společnost pro nedestruktivní testování, Praha, 2017, 91–95. ISBN 978-80-214-5554-2.
 12. HOLEŠOVSKÝ, J. Sensitivity assessment and comparison of maxima methods in the estimation of extremal index. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 110 – 120. ISBN 978-80-7582-026-6.
 13. HOLEŠOVSKÝ, J. Sensitivity assessment of extremal index maxima estimates in the estimation of extreme values for stationary time series. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, #Ho/1–6. ISBN 978-80-7231-417-1.
 14. CHRASTINOVÁ, V. The intransitive Lie group actions with variable structure constants. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 141–146. ISBN 978-80-7582-026-6.
 15. CHRASTINOVÁ, V. The Lie's structure constants need not be constant. constants. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 101–105. ISBN 978-80-7231-417-1.
 16. JAROŠOVÁ, P.; VALA, J. Computational prediction and control of energy consumption for heating in building structures. *ICNAAM (International Conference on Numerical Analysis and Applied Mathematics)* in Rhodes, 2016. AIP Conference Proceedings 1863, Melville (USA), 2017, #480010/1–4. ISBN 978-0-7354-1538-6, ISSN 0094-243X.
 17. KONEČNÁ, K. Priestley-Chao estimator of conditional density. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 151–163. ISBN 978-80-7582-026-6.
 18. KONEČNÁ, K. Statistical properties of the local linear estimator of conditional density. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, #E/1-7. ISBN 978-80-7231-417-1.

19. NOVOTNÝ, J. Neuronové sítě. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 101–106. ISBN 978-80-7582-026-6.
20. NOVOTNÝ, J. Plošný integrál v systému MAPLE. 25th *International Colloquium on the Management of Educational Process*_in Brno, 2017. University of Defence in Brno, 2017, 101–108. ISBN 978-80-7231-419-5.
21. PAZDERA, L.; TOPOLÁŘ, L.; MIKULÁŠEK, K. Application acoustic emission method during cyclic loading of concrete beam. *NDT in Progress* in Prague, 2017. Institute of Thermomechanics AS CR, Prague, 51–56. ISBN 978-80-87012-63-5, ISSN 1213-3825.
22. PAZDERA, L.; TOPOLÁŘ, L.; HODULÁKOVÁ, M.; MIKULÁŠEK, K.; SMUTNÝ, J. Impact of the heat load of concrete on the propagation of ultrasound waves. *Experimental Stress Analysis* in Košice, 2017. TU Košice, 2017, 392–397. ISBN 978-80-553-3167-6.
23. PAZDERA, L.; TOPOLÁŘ, L.; MIKULÁŠEK, K.; SMUTNÝ, J.; HODULÁKOVÁ, M.; CHOBOLA, Z.; SEELMANN, H. Flexure response of thermal loaded concrete specimens by acoustic emission method. *DYN-WIND (Dynamics of Civil Engineering and Transport Structures and Wind Engineering)* in Paris, 2017, MATEC Web of Conferences (France), 2017, #X/1–7. ISSN:2261-236X.
24. ROZEHNALOVÁ, P. Numerical integration in Trefftz finite element method. 18th *Programs and Algorithms of Numerical Mathematics (PANM)* in Janov nad Nisou, 2016. Institute of Mathematics AS CR, 2017, 97–101. ISBN: 978-80-85823-67-7.
25. ROZEHNALOVÁ, P.; FRANCŮ, J. Homogenization on domains with holes. 16th *Aplimat (Conference on Applied Mathematics)* in Bratislava (2017). Spektrum STU, Bratislava, 2017, 1332–1341. ISBN 978-80-227-4650-2.
26. ŠAFARÍK, J.; DIBLÍK, J. Linear difference weakly delayed systems, the case of complex conjugate eigenvalues of the matrix of non-delayed terms. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 235–247. ISBN 978-80-7582-026-6.
27. ŠAFARÍK, J.; DIBLÍK, J. Solution of weakly delayed systems in the case of complex conjugate roots of characteristic equation. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, #Sa/1–8. ISBN 978-80-7231-417-1.
28. ŠAFARÍK, J.; SLABĚŇÁKOVÁ, J.; SIVČÁK, J. Výuka deskriptivní geometrie na Fakultě stavební VUT a nové studijní materiály vytvářené v dynamickém systému GeoGebra. *Slovak-Czech Conference on Geometry and Graphics* in Bratislava, 2017. Slovak Society for Geometry and Graphics & Czech Society for Geometry and Graphics, 2017, 153–162. ISBN 978-80-89597-78-9.
29. ŠAFARÍK, J. Weakly delayed systems in \$R^3\$. 23rd *Student Conference at FEEC BUT* in Brno, 2017. Brno University of Technology, 2017, 604–608. ISBN 978-80-214-5496-5.
30. ŠPAČEK, P.; KOMENDA, J. Analysis of cycle time in interval P-time event graphs in dioid algebras. 20th *International Federation of Automatic Control (IFAC) World Congress* in Toulouse, 2017, 13461–13467. Elsevier, Amsterdam, 2017. ISBN 978-3-902661-93-7.

31. TOPOLÁŘ, L.; PAZDERA, L.; HODULÁKOVÁ, M.; MIKULÁŠEK, K. Selected applications of acoustic methods in building materials monitoring. *Research and Modelling in Civil Engineering* in Koszalin, 2017. TU Koszalin, 2017, 63–80. ISBN 978-83-7365-474-7.
32. VALA, J. Computational modelling of thermal consumption of buildings with controlled interior temperature. 18th *Programs and Algorithms of Numerical Mathematics (PANM)* in Janov nad Nisou, 2016. Institute of Mathematics AS CR, Prague, 2017, 130–143. ISBN 978-80-85823-67-7.
33. VALA, J. Computational prediction and optimization of thermal consumption in buildings. 16th *Aplimat (Conference on Applied Mathematics)* in Bratislava, 2017. Spektrum STU, Bratislava, 2017, 1607–1622. ISBN 978-80-227-4650-2.
34. VALA, J. Computational design optimization of low-energy buildings, 14th *Equa-diff* in Bratislava, 2017. Spektrum STU, Bratislava, 265–274. ISBN 978-80-227-4757-8.
35. VALA, J.; JAROŠOVÁ, P. Computational analysis of thermal transfer and related phenomena based on the Fourier method. *ICNAAM (International Conference on Numerical Analysis and Applied Mathematics)* in Rhodes, 2016. AIP Conference Proceedings 1863, Melville (USA), 2017, #48009/1–4. ISBN 978-0-7354-1538-6, ISSN 0094-243X.
36. VALA, J.; JAROŠOVÁ, P. Optimization of design parameters of low-energy buildings. 22nd *Thermophysics* in Terchová, 2017. AIP Conference Proceedings 1866, Melville (USA), 2017, #40041/1–6. ISBN 978-0-7354-1546-1, ISSN 0094-243X.
37. VANŽUROVÁ, A. Homothety curvature homogeneity. *MITAV (Mathematics, Information Technologies and Applied Sciences)* in Brno, 2017. University of Defence in Brno, 2017, 248–255. ISBN 978-80-7582-026-6.

Skripta:

HINTERLEITNER, I.; PŘIBYL, O. *Matematika 1 – Vybrané kapitoly z numerických výpočtů*. FAST VUT v Brně, 2017. ISBN 978-80-214-5523-8.

Účast na výzkumných projektech:

AdMaS UP – Advanced Materials, Structures and Technologies, projekt L01408, řešitel D. Novák. MAT: J. Diblík, I. Hinterleitner, P. Rozehnalová, J. Vala.

Doktorské studium:

E. Jansová	školitel	doc. J. Kalas	PřF MU
K. Konečná	školitelka	prof. I. Horová	PřF MU
K. Mencáková	školitel	prof. J. Diblík	FEKT VUT
O. Přibyl	školitel	doc. J. Raclavský	FAST VUT
J. Šafařík	školitel	prof. J. Diblík	FEKT VUT

Schválil dne 30. dubna 2018

prof. RNDr. Josef Diblík, DrSc.,
vedoucí ústavu MAT