

2024 PROFESSIONAL ACTIVITIES

BUT FCE INSTITUTE OF MATHEMATICS AND DESCRIPTIVE GEOMETRY

Staff

Head: Jan Holešovský

Professors: Josef Diblík, Jiří Vala

Associate professors: Irena Hinterleitner, Vladislav Kozák, Miroslav Trcala

Assistant professors: Hana Boháčková (Halfarová), Darina Brothánková, Jana Bulantová, Jan Holešovský, Veronika Chrastinová, Eva Jansová, Kristýna Mencáková, Karel Mikulášek, Blanka Morávková, Radko Odehnal, Šárka Pechancová, Kateřina Pokorová, Oto Příbyl, Petra Rozehnalová, Rudolf Schwarz, Jana Slaběňáková, Jan Šafařík, Pavel Špaček, Lucie Zrůstová

Assistants: Matouš Cabalka, Anna Derevianko, Marie Hartmanová

Technical and economic staff: Zdeňka Dvorská, Alena Vlčková

Papers published in journals

- [1] [BARNAT, J.; PŘIBYL, O.; VILD, M.; ŠMAK, M.; RUBINA, A.; BAJER, M. Calibration of models predicting the load-bearing capacity of bonded anchors using a genetic algorithm. *Case Studies in Construction Materials* 20 \(2024\), e03252 / 1–15. ISSN 2214-5095. \[WoS AIS \\(2023\\) Q1.\]\(#\)](#)
- [2] [DIBLÍK, J.; PITUK, M.; SZEDERKÉNYI, G. Large time behavior of nonautonomous linear differential equations with Kirchhoff coefficients. *Automatica* 161 \(2024\), 111473 / 1–4. ISSN: 2227-7390. \[WoS AIS \\(2023\\) Q1.\]\(#\)](#)
- [3] [DIBLÍK, J.; RŮŽIČKOVÁ, M. Vanishing and blow-up solutions to a class of nonlinear complex differential equations near the singular point. *Advances in Nonlinear Analysis* 13 \(2024\), 2024, 20230120 / 1–44. ISSN 2191-9496. \[WoS AIS \\(2023\\) Q1.\]\(#\)](#)
- [4] [KOZÁK, V.; VALA, J. Use of cohesive approaches for modelling critical states in fibre-reinforced structural materials. *Materials* 17 \(2024\), 3177 / 1–21. ISSN 1996-1944. \[WoS AIS \\(2023\\) Q1.\]\(#\)](#)
- [5] [TRCALA, M.; SUCHOMELOVÁ, P.; BOŠANSKÝ, M.; HOKEŠ, F.; NĚMEC, I. The generalized Kelvin chain-based model for an orthotropic viscoelastic material. *Mechanics of Time-Dependent Materials* 28 \(2024\), 1639–1659. ISSN 1573-2738. \[WoS AIS \\(2023\\) Q2.\]\(#\)](#)
- [6] [TRCALA, M.; SUCHOMELOVÁ, P.; BOŠANSKÝ, M.; NĚMEC, I. A constitutive model considering creep damage of wood. *Mechanics of Time-Dependent Materials* 28 \(2024\), 163–183. ISSN 1573-2738. \[WoS AIS \\(2023\\) Q2.\]\(#\)](#)

- [7] VÍTKOVÁ, L.; HINTERLEITNER, I.; MIKEŠ, J. [Rigidity of holomorphically projective mappings of Kähler spaces with finite complete geodesics](#). *Mathematics* 12 (2024), 1239 / 1–13. ISSN 2227-7390. WoS AIS (2023) Q3.

Papers in conference proceedings

- [1] DEREVIANKO, A.; VAŠÍK, P. [Search for similarity transformation between image point clouds using geometric algebra for conics](#). *1st ICACGA (Advanced Computational Applications of Geometric Algebra)* in Denver (2022), *Lecture Notes in Computer Science*, Springer Nature 13771 (2024), 215–226. ISBN 978-3-030-98260-7.
- [2] DIBLÍK, J.; HARTMANOVÁ, H. [Existence of a bounded solution of a non-homogeneous linear planar discrete system](#). *20th ICNAAM (International Conference of Numerical Analysis and Applied Mathematics)* in Heraklion (2022), *AIP Conference Proceedings* 3094 (2024), 400003 / 1–4. ISBN 978-0-7354-4954-1. ISSN 1551-7616.
- [3] DIBLÍK, J.; ŠAFAŘÍK, J.; HALFAROVÁ, H. [General solution of a three-dimensional linear difference system with a delay](#). *20th ICNAAM (International Conference of Numerical Analysis and Applied Mathematics)* in Heraklion (2022), *AIP Conference Proceedings* 3094 (2024), 400004 / 1–4. ISBN 978-0-7354-4954-1. ISSN 1551-7616.
- [4] KOZÁK, V. [Crack propagation modelling using XFEM, building materials applications](#). *22nd Algoritmy* in Podbanské (2024), *Proceedings (Jednota slovenských matematikov a fyzikov)*, 235–244. ISBN 978-80-89829-33-0.
- [5] KOZÁK, V.; VALA, J. [Prediction of the high temperature crack propagation in the AISI 304L steel using the cohesive approach](#). *22nd Thermophysics* in Dalešice (2022), *AIP Conference Proceedings* 3126 (2024), 020011 / 1–6. ISBN 978-0-7354-4873-5. ISSN 1551-7616.
- [6] VALA, J. [Computational smeared damage in the macroscopic analysis of quasi-brittle materials and structures](#). *22nd Algoritmy* in Podbanské (2024), *Proceedings (Jednota slovenských matematikov a fyzikov)*, 46–55. ISBN 978-80-89829-33-0.
- [7] VALA, J. [On an explicit computational scheme for the analysis of dynamical behaviour of quasi-brittle composite structures](#). *20th ICNAAM (International Conference of Numerical Analysis and Applied Mathematics)* in Heraklion (2022), *AIP Conference Proceedings* 3094 (2024), 400006 / 1–4. ISBN 978-0-7354-4954-1. ISSN 1551-7616.

Doctoral study

- [1] M. Hartmanová: supervisor J. Diblík (BUT FEEC), continues in 2025.

Ing. Jan Holešovský, Ph.D.,
vedoucí ústavu MAT