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Obsah

Články v časopisoch

ANDOVA, V. – KNOR, M. – ŠKREKOVSKI, R. Distance based indices in nanotubical graphs: part 3. *Journal of Mathematical Chemistry,* 59. s. 250–263.

> Kľúčové slová: distance, open nanotube, nanotubical graphs

ASICI, E. – MESIAR, R. On the construction of uninorms on bounded lattices. *Fuzzy Sets and Systems,* s. 65–85.

> Kľúčové slová: bounded lattice, neutral element, uninorm

ASICI, E. – MESIAR, R. On the direct product of uninorms on bounded lattices. *Kybernetika :,* 57. s. 989–1004.

> Kľúčové slová: direct product, uninorm, partial order

BARICZOVÁ, G. – ERDÉLYI, J. – HONTI, R. – TOMEK, L. Wall Structure Geometry Verification Using TLS Data and BIM Model. *Applied Sciences,* 11. s. 24.

> Kľúčové slová: terrestrial laser scanning, Building Information Modeling (BIM), automation, IFC, geometry verification

BELIAKOV, G. – JAMES, S. – KOLESÁROVÁ, A. – MESIAR, R. Cardinality-limiting extended pre-aggregation functions. *Information Fusion,* s. 66–74.

> Kľúčové slová: pre-aggregation functions, aggregation function, extended aggregation function

BOCZEK, M. – JIN, L. – MESIAR, R. – YAGER, R R. On monotonicity of the interval Sugeno integral. *IEEE Transactions on fuzzy systems,* 29. s. 2825–2827.

> Kľúčové slová: congruent lambda-ordering, Sugeno integral, interval Sugeno integral

BUSTINCE, H. – MESIAR, R. – FERNANDEZ, J. – GALAR, M. – PATERNAIN, D. – ALTALHI, A H. – DIMURO, G P. – BEDREGAL, B. – TAKÁČ, Z. d-Choquet integrals: Choquet integrals based on dissimilarities. *Fuzzy Sets and Systems,* s. 1–27.

> Kľúčové slová: Choquet integral, dissimilarity

ČREPNJAK, M. – KNOR, M. – TRATNIK, N. – PLETERŠEK, P Ž. The Graovac-Pisanski index of connected bipartite graphs with applications to hydrocarbon molecules. *Fullerenes Nanotubes and Carbon Nanostructures,* 29. s. 884–889.

> Kľúčové slová: graph distance, Graovac-Pisanski index, modified Wiener index

DALFÓ, C S. – FIOL, M A. – PAVLÍKOVÁ, S. – ŠIRÁŇ, J. Spectra and eigenspaces of arbitrary lifts of graphs. *Journal of algebraic combinatorics,* 54. s. 651–672.

> Kľúčové slová: graph covering, lift, graph

DORIA, S. – MESIAR, R. – ŠELIGA, A. Sub-additive aggregation functions and their applications in construction of coherent upper previsions. *Mathematics,* 9. s. 1.

> Kľúčové slová: sub-additive transformations, aggregation function, coherent upper prevision

ERSKINE, G. – FRATRIČ, P. – ŠIRÁŇ, J. Graphs derived from perfect difference sets. *Australasian journal of combinatorics,* 80. s. 48–56.

   Kľúčové slová: difference sets, graph theory

ERSKINE, G. – GRIGGS, T. – ŠIRÁŇ, J. Colouring problems for symmetric configurations with block size 3. *Journal of Combinatorial Designs,* 29. s. 397–423.

   Kľúčové slová: blocking set, chromatic number, configuration

FRANEK, M. – MACÁK, M. Effects of interference on local peak pressures between two buildings with an elliptical cross-section. *Slovak Journal of Civil Engineering,* 29. s. 35–41.

   Kľúčové slová: wind tunnel, external wind pressure coefficient, effects of interference, elliptical high-rise building

FRANEK, M. – MACÁK, M. – HUBOVÁ, O. – IVÁNKOVÁ, O. Impact of Turbulence Models of Wind Pressure on two Buildings with Atypical Cross-Sections. *Civil and environmental engineering,* 17. s. 409–419.

   Kľúčové slová: atypical cross-section of the structure, external pressure coefficients, wind tunnel, computational fluid dynamics

FROLKOVIČ, P. – KLEINOVÁ, V. A new numerical method for level set motion in normal direction used in optical flow estimation. *Discrete and Continuous Dynamical Systems – Series S,* 14. s. 851–863.

   Kľúčové slová: level set equation, optical flow, motion in normal direction

FROLKOVIČ, P. – MIKULA, K. – HAHN, J. – DIRK, M. – BASARA, B. Flux balanced approximation with least-squares gradient for diffusion equation on polyhedral mesh. *Discrete and Continuous Dynamical Systems – Series S,* 14. s. 865–879.

   Kľúčové slová: finite volume method, polyhedral mesh, least-squares gradient

GHOSH, M. – OBAIDULLAH, S M. – GHERARDINI, F. – ŽDÍMALOVÁ, M. Classification of geometric forms in mosaics using deep neural network. *Journal of Imaging,* 7. s. 2021.

   Kľúčové slová: pattern recognition, deep learning, convolutional neural networks

HANDLOVIČOVÁ, A. – MIKULA, K. Finite volume schemes for the affine morphological scale space (AMSS) model. *Tatra Mountains Mathematical Publications,* s. 53–70.

   Kľúčové slová: finite volume schemes, semi-implicit scheme, error, affine morphological scale space

HLINĚNÁ, D. – KALINA, M. Characterization of uninorms on bounded lattices and pre-order they induce. *International Journal of Computational Intelligence Systems,* 14. s. 148–158.

   Kľúčové slová: bounded lattice, divisible uninorm, I-group

HUBOVÁ, O. – MACÁK, M. – GRMANOVÁ, A. Aerodynamic study of the wind flow in the area of the R2 expressway in Slovakia. *Slovak Journal of Civil Engineering,* 29. s. 55–61.

   Kľúčové slová: wind velocity, CFD, wind direction

HUDEC, M. – MINÁRIKOVÁ, E. – MESIAR, R. – SARANTI, A. – HOLZINGER, A. Classification by ordinal sums

Články v časopisoch

of conjunctive and disjunctive functions for explainable AI and interpretable machine learning solutions. *Knowledge-Based Systems,* s. 2021.

Kľúčové slová: explainable AI, interpretable machine learning, interactive machine learning

HÚSKA, M. – MEDĽA, M. – MIKULA, K. – MORIGI, S. Lagrangian evolution approach to surface-patch quadrangulation. *Applications of Mathematics,* 66. s. 509–551.

Kľúčové slová: Lagrangian evolution, mesh partitioning, patches

JÁNOŠ, P. – MESEŽNIKOV, D. An upper bound on the order of graphs of diameter two arising as abelian lifts of multigraphs. *Australasian journal of combinatorics,* 81. s. 357–366.

Kľúčové slová: multigraph, upper bound, abelian lifts

JIN, L. – CHEN, Z. – YAGER, R R. – ŠPIRKOVÁ, J. – MESIAR, R. – PATERNAIN, D. – BUSTINCE, H. GnIOWA operators and some weights allocation methods with their properties. *International Journal of Intelligent Systems,* 36. s. 2367–2386.

Kľúčové slová: IOWA operators, decision making, aggregation operator

JIN, L. – KOLESÁROVÁ, A. – MESIAR, R. Semicopula based integrals. *Fuzzy Sets and Systems,* s. 106–119.

Kľúčové slová: Choquet integral, semicopula, aggregation function

JIN, L. – MESIAR, R. – STUPŇANOVÁ, A. – YAGER, R R. – KALINA, M. On some construction method and orness measure of bi-capacities. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems,* 29. s. 107–117.

Kľúčové slová: bi-Choquet integral, bi-capacity, aggregation operator

JIN, L. – MESIAR, R. – STUPŇANOVÁ, A. – YAGER, R R. Some generalized integrals applied in scientometrics and related evaluation. *IEEE Transactions on Emerging Topics in Computational Intelligence,* 5. s. 846–853.

Kľúčové slová: aggregation function, cognitive integral, decision making

JIN, L. – MESIAR, R. – YAGER, R R. Derived Fuzzy Measures and Derived Choquet Integrals With Some Properties. *IEEE Transactions on fuzzy systems,* 29. s. 1320–1324.

Kľúčové slová: Choquet integral, fuzzy measure, aggregation function

JIN, L. – MESIAR, R. – YAGER, R R. On WA expressions of induced OWA operators and inducing function based orness with application in evaluation. *IEEE Transactions on fuzzy systems,* 29. s. 1695–1700.

Kľúčové slová: information fusion, evaluation, aggregation operator

JIN, L. – MESIAR, R. – YAGER, R R. Some decision taking rules based on ordering determined partitions. *International Journal of General Systems,* 50. s. 26–35.

Kľúčové slová: aggregation operators, decision making, evaluation

JIN, L. – MESIAR, R. – YAGER, R R. The properties of crescent preference vectors and their utility in decision making with risk and preferences. *Fuzzy Sets and Systems,* s. 114–127.

Kľúčové slová: Choquet integral, crescent method, bipolar preference

JIN, L. – YAGER, R R. – CHEN, Z. – ŠPIRKOVÁ, J. – PATERNAIN, D. – MESIAR, R. – BUSTINCE, H. Some bipolar-preferences-involved aggregation methods for a sequence of OWA weight vectors. *Soft Computing,* 25. s. 895–902.

Kľúčové slová: aggregation functions, decision making, evaluation

JIN, L. – YAGER, R R. – ŠPIRKOVÁ, J. – MESIAR, R. – PATERNAIN, D. – BUSTINCE, H. OWA aggregation with dual preferences for basic uncertain information. *Journal of Intelligent and Fuzzy Systems,* 40. s. 4535–4544.

Kľúčové slová: aggregation function, decision making, basic uncertain information (BUI)

JIN, X. – YAGER, R R. – MESIAR, R. – BORKOTOKEY, S. – JIN, L. Comprehensive interval-induced weights allocation with bipolar preference in multi-criteria evaluation. *Mathematics,* 9. s. 16.

Kľúčové slová: bipolar preference, ordered weighted average (OWA) aggregation on convex posets, aggregation operator

KALINA, M. Slovak Mathematical Society – a short overview of history and present. *EMS Magazine,* s. 48–49.

Kľúčové slová: Slovak Mathematical Society

KALINA, M. – STAŠOVÁ, O. Idempotent uninorms and nullnorms on bounded posets. *Iranian Journal of Fuzzy Systems,* 18. s. 53–68.

Kľúčové slová: associative operation, monoids, fuzzy connective

KLEMENT, E P. – KOUCHAKINEJAD, F. – GUHA, D. – MESIAR, R. Generalizing expected values to the case of L*-fuzzy events. *International Journal of General Systems,* 50. s. 36–62.

Kľúčové slová: Choquet integral, expected value, capacity

KNOR, M. – MAJSTOROVIĆ, S. – MASA TOSHI, A T. – ŠKREKOVSKI, R. – YERO, I G. Graphs with the edge metric dimension smaller than the metric dimension. *Applied Mathematics and Computation,* s. 2021.

Kľúčové slová: metric dimension, unicyclic graph, edge metric dimension

KNOR, M. – ŠKREKOVSKI, R. – TEPEH, A. Domination versus independent domination in regular graphs. *Journal of Graph Theory,* 98. s. 525–530.

Kľúčové slová: domination, extremal graphs

KNOR, M. – ŠKREKOVSKI, R. Wiener complexity versus the eccentric complexity. *Mathematics,* 9. s. 1.

Kľúčové slová: Wiener index, graph, diameter

KOLESÁROVÁ, A. – JIN, L. – MESIAR, R. Scaled aggregation functions. *Information Sciences,* s. 206–216.

Články v časopisoch

Kľúčové slová: interval scale invariant function, aggregation function, scaling transformation

KÓSA, B. – MIKULA, K. – UBA, M O. – WEBERLING, A. – CHRISTODOULOU, N. – ZERNICKA-GOETZ, M. 3D image segmentation supported by a point cloud. *Discrete and Continuous Dynamical Systems – Series S,* 14. s. 971–985.

Kľúčové slová: advection equation, level set method, point cloud

LI, J. – OUYANG, Y. – MESIAR, R. Generalized convergence theorems for monotone measures. *Fuzzy Sets and Systems,* s. 53–64.

Kľúčové slová: Riesz theorem, non-additive measures, absolute continuity

MACÁK, M. – ČUNDERLÍK, R. – MIKULA, K. – MINARECHOVÁ, Z. Computational optimization in solving the geodetic boundary value problems. *Discrete and Continuous Dynamical Systems – Series S,* 14. s. 987–999.

Kľúčové slová: computational optimization, geodetic boundary value problem, finite volume method

MARCO-DETCHART, C. – BUSTINCE, H. – FERNANDEZ, J. – MESIAR, R. – LAFUENTE, J. – BARRENE-CHEA, E. – PINTOR, J M. Ordered directional monotonicity in the construction of edge detectors. *Fuzzy Sets and Systems,* s. 111–132.

Kľúčové slová: edge detection, ordered directionally monotone functions, directional monotonicity

MESIAR, R. – KOLESÁROVÁ, A. – BORKOTOKEY, S. 2-set-based extended functions. *Iranian Journal of Fuzzy Systems,* 18. s. 13–26.

MESIAR, R. – SAADATI, R. Existence-uniqueness and wright stability results of the Riemann-Liouville fractional equations by random controllers in MB-spaces. *Mathematics,* 9. s. 14.

Kľúčové slová: MB-spaces, integro-differential equation, Riemann-Liouville fractional equation

MESIAR, R. – SHEIKHI, A. Nonlinear random forest classification, a copula-based approach. *Applied Sciences,* 11. s. 15.

Kľúčové slová: mutual information, random forest, copula

MESIAR, R. – STUPŇANOVÁ, A. Directional shift-stable functions. *Mathematics,* 9. s. 10.

Kľúčové slová: pre-aggregation functions, aggregation function, directional monotonicity

MIKULA, K. – AMBROZ, M. – MOKOŠOVÁ, R. What was the river Ister in the time of Strabo? A mathematical approach. *Tatra Mountains Mathematical Publications,* s. 71–118.

Kľúčové slová: geographical research, Strabo, affine transformation

MIKULA, K. – ŠIBÍKOVÁ, M. – AMBROZ, M. – KOLLÁR, M. – OŽVAT, A A. – URBÁN, J. – JAROLÍMEK, I. – ŠIBÍK, J. NaturaSat – A software tool for identification, monitoring and evaluation of habitats by remote sensing techniques. *Remote Sensing,* 13. s. 17.

Kľúčové slová: NaturaSat, aerial photographs, biodiversity

MIKULA, K. – URBÁN, J. – KOLLÁR, M. – AMBROZ, M. – JAROLÍMEK, I. – ŠIBÍK, J. – ŠIBÍKOVÁ, M. An

automated segmentation of NATURA 2000 habitats from Sentinel-2 optical data. *Discrete and Continuous Dynamical Systems – Series S,* 14. s. 1017–1032.

Kľúčové slová: numerical method, curve evolution, image segmentation

MIKULA, K. – URBÁN, J. – KOLLÁR, M. – AMBROZ, M. – JAROLÍMEK, I. – ŠIBÍK, J. – ŠIBÍKOVÁ, M. Semi-automatic segmentation of NATURA 2000 habitats in Sentinel-2 satellite images by evolving open curves. *Discrete and Continuous Dynamical Systems – Series S,* 14. s. 1033–1046.

Kľúčové slová: numerical method, curve evolution, image segmentation

MINARECHOVÁ, Z. – MACÁK, M. – ČUNDERLÍK, R. – MIKULA, K. On the finite element method for solving the oblique derivative boundary value problems and its application in local gravity field modelling. *Journal of geodesy,* 95. s. 2021.

Kľúčové slová: finite element method (FEM), local gravity field modelling, oblique derivative boundary-value problem

OKOCK, P O. – URBÁN, J. – MIKULA, K. Improvement and handling of the segmentation model with an inflation term. *Tatra Mountains Mathematical Publications,* s. 119–134.

Kľúčové slová: estimation, Geodesic Active Contours, balloon model

SAMINGER-PLATZ, S. – KOLESÁROVÁ, A. – ŠELIGA, A. – MESIAR, R. – KLEMENT, E P. New results on perturbation-based copulas. *Dependence Modeling,* 9. s. 347–373.

Kľúčové slová: perturbation, dependence parameters, ordinal sum, Eyraud-Farlie-Gumbel-Morgenstern copula, copula

SAMINGER-PLATZ, S. – KOLESÁROVÁ, A. – ŠELIGA, A. – MESIAR, R. – KLEMENT, E P. The impact on the properties of the EFGM copulas when extending this family. *Fuzzy Sets and Systems,* s. 1–26.

Kľúčové slová: extended FGM family, Schur concave copula, copula

SHEIKHI, A. – AMIRZADEH, V. – MESIAR, R. A comprehensive family of copulas to model bivariate random noise and perturbation. *Fuzzy Sets and Systems,* s. 27–36.

Kľúčové slová: perturbation of copula, noise, copula

SINGH, V. – MESIAR, R. – DUTTA, B. – GOH, M. Residual implications on lattice L of intuitionistic truth values based on powers of continuous t-norms. *Information Sciences,* s. 109–128.

Kľúčové slová: powers of t-norms, fuzzy implications, continuous t-norms

STUPŇANOVÁ, A. – SU, Y. – MESIAR, R. End-point linear functions. *Iranian Journal of Fuzzy Systems,* 18. s. 1–12.

Kľúčové slová: aggregation function, end-point linear function, copula

ŠELIGA, A. – KAUERS, M. – SAMINGER-PLATZ, S. – MESIAR, R. – KOLESÁROVÁ, A. – KLEMENT, E P. Polynomial bivariate copulas of degree five: characterization and some particular inequalities. *Dependence Modeling,* 9. s. 13–42.

Kľúčové slová: polynomial inequality, copula, cylindrical algebraic decomposition

Články v časopisoch

ŠELIGA, A. – SMREK, P. Collection integral vs. Choquet integral. *Fuzzy Sets and Systems,* s. 95–105.

    Kľúčové slová: Choquet integral, collection integral, integral inequalities

TIBENSKÝ, M. – HANDLOVIČOVÁ, A. Convergence analysis of the discrete duality finite volume scheme for the regularised Heston model. *Discrete and Continuous Dynamical Systems – Series S,* 14. s. 1181–1195.

    Kľúčové slová: Heston model, financial derivatives pricing, discrete duality finite volume method

VELICHOVÁ, D. – VAJSÁBLOVÁ, M. Geometria, kartografia a fyzika v nových knižných publikáciách Vydavateľstva Spektrum STU. *G – Slovenský časopis pre geometriu a grafiku. Slovak journal for geometry and graphics,* 18. s. 21.

    Kľúčové slová: cartography, physics, knižné novinky, new books, fyzika, kartografia, geometry, geometria

YANG, R. – PU, X. – PATERNAIN, D. – YAGER, R R. – MESIAR, R. – BUSTINCE, H. – JIN, L. Some methods for Yager preference involved aggregations in multi-criteria and multi-sources evaluation. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems,* 29. s. 587–602.

    Kľúčové slová: aggregation function, decision making, evaluation methods

YOUSEFI, A. – MASHINCHI, M. – MESIAR, R. Some notes on the category of fuzzy implications on bounded lattices. *Kybernetika,* 57. s. 332–351.

    Kľúčové slová: fuzzy implication, t-norm, skeleton of category

Monografie, učebnice, skriptá, príručky, normy, patenty, výskumné správy, iné neperiodické publikácie

MACÁK, M. – MINARECHOVÁ, Z. *Numerická matematika (nielen) pre geodetov a kartografov.* Bratislava : Spektrum STU, 2021. ISBN 978-80-227-5078-3.

Kľúčové slová: sústavy lineárnych rovníc, numerická matematika, metódy variačné

STAŠOVÁ, O. – MEDĽA, M. *Softvér Mathematica: prvý diel.* Bratislava : Spektrum STU, 2021. ISBN 978-80-227-5138-4.

Kľúčové slová: mathematical modelling, software Mathematica

ŠIPOŠOVÁ, A. – ŠELIGA, A. – KALICKÁ, J. *Optimalizačné metódy a základy pravdepodobnosti.* Bratislava : Spektrum STU, 2021. 199 s. ISBN 978-80-227-5103-2.

Kľúčové slová: grafové algoritmy, optimalizácia, teória pravdepodobnosti, optimalizačné metódy, pravdepodobnosť

VAJSÁBLOVÁ, M. *Matematické základy kartografie.* Bratislava : Spektrum STU, 2021. 443 s. ISBN 978-80-227-5114-8.

Kľúčové slová: kartografické zobrazenie, elipsoid, Lambertovo zobrazenie, matematická kartografia, kužeľové zobrazenie

Príspevky v zborníkoch, kapitoly v monografiách/učebniciach, abstrakty

ÁBRAHÁMOVÁ, A. Ritz method in the mathematical cartography. In BISTÁK, A. *Advances in Architectural, Civil and Environmental Engineering.* Bratislava: Spektrum STU, 2021, s. 13–18. ISBN 978-80-227-5150-6.

    Kľúčové slová: Poisson equation, variational calculus, Ritz method

ANDOVA, V. – KNOR, M. – ŠKREKOVSKI, R. Distance based indices in generalized nanotubical graphs. In GYÜRKI, Š. – PAVLÍKOVÁ, S. – ŠIRÁŇ, J. *Booklet of Abstracts for the 56th Czech and Slovak Conference on Graph Theory – CSGT 2021.* Bratislava: Slovenská technická univerzita v Bratislave, 2021, s. 36. ISBN 978-80-89829-07-1.

    Kľúčové slová: distance-based index, nanotubical graphs

ASICI, E. – MESIAR, R. Some conclusions on the direct product of uninorms on bounded lattices. In MESIAR, R. – REFORMAT, M. – ŠTĚPNIČKA, M. – HURTÍK, P. *Joint Proceedings of the 19th World Congress of the International Fuzzy Systems Association (IFSA), the 12th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT), and the 11th International Summer School on Aggregation Operators (AGOP).* Dordrecht: Atlantis Press, 2021, s. 647–653. ISBN 978-94-6239-423-0.

    Kľúčové slová: direct product, uninorm, partial order

BALLOVÁ, D. Detecting change-points in multivariate hydrological time series. In *Book of abstracts ASMDA 2021 and Demographics 2021 Workshop.* [s.l.]: [s.n.], 2021, s. 23–24.

    Kľúčové slová: change-point analysis, time series analysis, hydrological time series

BUSTINCE, H. – MESIAR, R. – DIMURO, G P. – FERNANDEZ, J. – BEDREGAL, B. The evolution of the notion of overlap functions. In LESOT, M. – MARSALA, C. *Fuzzy Approaches for Soft Computing and Approximate Reasoning: Theories and Applications.* Cham: Springer Nature, 2021, s. 21–29. ISBN 978-3-030-54340-2.

    Kľúčové slová: applications, overlap functions, triangular norms

CASTILLO-LÓPEZ, A. – MINÁROVÁ, M. – RODRÍGUEZ-MARTÍNEZ, I. – FUMANAL-IDOCIN, J. – BUSTINCE, H. Cosmological clustering: A gravitational clustering approach inspired on large-scale cosmos' structure and dynamics. In MESIAR, R. – REFORMAT, M. – ŠTĚPNIČKA, M. *Book of Abstracts: IFSA-EUSFLAT 2021 jointly with AGOP, IJCRS, and FQAS.* Ostrava: University of Ostrava, 2021, s. 85. ISBN 978-80-7599-269-7.

    Kľúčové slová: cluster analysis, gravitational clustering

ČAHOJOVÁ, L. – DÍTĚ, D. – DÍTĚTOVÁ, Z. – FRAŠTIA, M. – KOLLÁR, M. – MARČIŠ, M. – MIKULA, K. – ŠIBÍK, J. – ŠIBÍKOVÁ, M. Management optimization of Pannonian salt steppes and salt marshes in southern Slovakia based on remote sensing. In CHYTRÝ, M. – BIURRUN, I. *Revegetating Europe – Contributions of the EVS to the UN Decade on Ecosystem Restoration.* Brussels: European Vegetation Survey (Working Group of the IAVS), 2021, s. 15.

    Kľúčové slová: remote sensing, Pannonian salt steppes, optimal management

FUMANAL-IDOCIN, J. – MINÁROVÁ, M. – FERNANDEZ, F J. – CORDÓN, O. – BUSTINCE, H. Affinity functions and centrality measures in social network analysis. In MESIAR, R. – REFORMAT, M. – ŠTĚPNIČKA, M. *Book of Abstracts: IFSA-EUSFLAT 2021 jointly with AGOP, IJCRS, and FQAS.* Ostrava: University of Ostrava, 2021, s. 80–81. ISBN 978-80-7599-269-7.

Kľúčové slová: centrality measures, affine functions, social networks

GYÜRKI, Š. A systematic search for vertex transitive directed strongly regular graphs. In KUTSIA, T. *9th International Symposium on Symbolic Computation in Software Science (SCSS 2021).* Linz: RISC Johannes Kepler University Linz, 2021, s. 22–27.

Kľúčové slová: vertex-transitive graph, strongly regular graph

GYÜRKI, Š. – JÁNOŠ, P. – ŠIAGIOVÁ, J. – ŠIRÁŇ, J. On a relation between G-graphs and lifting construction. In GYÜRKI, Š. – PAVLÍKOVÁ, S. – ŠIRÁŇ, J. *Booklet of Abstracts for the 56th Czech and Slovak Conference on Graph Theory – CSGT 2021.* Bratislava: Slovenská technická univerzita v Bratislave, 2021, s. 32. ISBN 978-80-89829-07-1.

Kľúčové slová: G-graph, graph lifting

GYÜRKI, Š. Vertex transitive directed strongly regular graphs of order up to 32. In GYÜRKI, Š. – PAVLÍKOVÁ, S. – ŠIRÁŇ, J. *Booklet of Abstracts for the 56th Czech and Slovak Conference on Graph Theory – CSGT 2021.* Bratislava: Slovenská technická univerzita v Bratislave, 2021, s. 27. ISBN 978-80-89829-07-1.

Kľúčové slová: strongly regular graph, vertex-transitive graph

HRIVOVÁ, I. Orientably-regular maps on dihedral groups. In BISTÁK, A. *Advances in Architectural, Civil and Environmental Engineering.* Bratislava: Spektrum STU, 2021, s. 19–25. ISBN 978-80-227-5150-6.

Kľúčové slová: automorphism group, dihedral group, orientably-regular maps

HUBOVÁ, O. – FRANEK, M. – MACÁK, M. Numerical and Experimental Investigation of Wind Load on Photovoltaic Panel Assemblies. In SHEELA, K G. *Current Approaches in Science and Technology Research Vol. 4.* Hooghly, West Bengal (India): Book Publisher International, 2021, s. 78–102. ISBN 978-93-91215-07-1.

Kľúčové slová: wind tunnel, computational fluid dynamics, photovoltaic panels

HUCÍKOVÁ, V. – BACHRATÝ, M. Orientably-regular maps with no non-trivial exponents. In GYÜRKI, Š. – PAVLÍKOVÁ, S. – ŠIRÁŇ, J. *Booklet of Abstracts for the 56th Czech and Slovak Conference on Graph Theory – CSGT 2021.* Bratislava: Slovenská technická univerzita v Bratislave, 2021, s. 21. ISBN 978-80-89829-07-1.

Kľúčové slová: orientably-regular maps, non-trivial exponents

HUDEC, M. – MESIAR, R. – MINÁRIKOVÁ, E. Applicability of ordinal sums of conjunctive and disjunctive functions in classification. In MESIAR, R. – REFORMAT, M. – ŠTĚPNIČKA, M. – HURTÍK, P. *Joint Proceedings of the 19th World Congress of the International Fuzzy Systems Association (IFSA), the 12th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT), and the 11th International Summer School on Aggregation Operators (AGOP).* Dordrecht: Atlantis Press, 2021, s. 602–607. ISBN 978-94-6239-423-0.

Kľúčové slová: conjunctive and disjunctive aggregation function, ordinal sum, averaging functions

IBOLYA, G. – MIKULA, K. Numerical solution of first order scalar conservation laws by the inflow-implicit/outflow-explicit finite volume method. In BISTÁK, A. *Advances in Architectural, Civil and Environmental Engineering.* Bratislava: Spektrum STU, 2021, s. 26–32. ISBN 978-80-227-5150-6.

Kľúčové slová: semi-implicit method, finite volume method, scalar conservation laws

Príspevky v zborníkoch, kapitoly v monografiách/učebniciach, abstrakty

JOVIĆ, B. – ČUČAKOVIĆ, A. – OBRATOV-PETKOVIĆ, D. – ŽDÍMALOVÁ, M. – KOMNENOV, M. Transposition of biomimetical principles into generative design: Example of the species Campanula patula L. In MAGNAGHI-DELFINO, P. – MELE, G. – NORANDO, T. *Faces of Geometry. II Edition.* Cham: Springer Nature, 2021, s. 139–158. ISBN 978-3-030-63701-9.

    Kľúčové slová: Campanula patula L, biomimetics, generative design method

KALINA, M. Continuous OWA operators. In MESIAR, R. – REFORMAT, M. – ŠTĚPNIČKA, M. – HURTÍK, P. *Joint Proceedings of the 19th World Congress of the International Fuzzy Systems Association (IFSA), the 12th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT), and the 11th International Summer School on Aggregation Operators (AGOP).* Dordrecht: Atlantis Press, 2021, s. 589–595. ISBN 978-94-6239-423-0.

    Kľúčové slová: canonical form of OWA operator, continuous OWA operator, OWA operator

KALINA, M. 2-uninorms and pre-order induced by them. In *SISY 2021.* Piscataway (USA): IEEE, 2021, s. 95–100. ISBN 978-1-6654-1380-0.

    Kľúčové slová: nullnorm, uninorm

KOLESÁROVÁ, A. – MESIAR, R. Aggregation based on outliers. In MESIAR, R. – REFORMAT, M. – ŠTĚP-NIČKA, M. – HURTÍK, P. *Joint Proceedings of the 19th World Congress of the International Fuzzy Systems Association (IFSA), the 12th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT), and the 11th International Summer School on Aggregation Operators (AGOP).* Dordrecht: Atlantis Press, 2021, s. 584–588. ISBN 978-94-6239-423-0.

    Kľúčové slová: Choquet integral, aggregation function, extended aggregation function

MACÁK, M. – MINARECHOVÁ, Z. – ČUNDERLÍK, R. – MIKULA, K. Stable finite element method for solving the oblique derivative boundary value problems in geodesy. In *Abstracts and Presentation EGU General Assembly 2021.* Göttingen: Copernicus Publications, 2021, s. 21–2614.

    Kľúčové slová: local gravity field modelling, finite elements method, oblique derivative boundary-value problem

MESIAR, R. – ŠELIGA, A. Collection and decomposition integrals in multicriteria-decision support. In PAP, E. *Artificial Intelligence: Theory and Applications.* Cham: Springer Nature, 2021, s. 31–46. ISBN 978-3-030-72710-9.

    Kľúčové slová: collection integral, decomposition integral, multicriteria decision support

MIKULA, K. – KOLLÁR, M. – OŽVAT, A A. – AMBROZ, M. – ŠIBÍKOVÁ, M. – ŠIBÍK, J. Construction and application of natural numerical networks. In BISTÁK, A. *Advances in Architectural, Civil and Environmental Engineering.* Bratislava: Spektrum STU, 2021, s. 33–38. ISBN 978-80-227-5150-6.

    Kľúčové slová: data classification, partial differential equations, forward-backward diffusion

PARK, S A. – MIKULA, K. Segmentation based cell tracking in 2D+time and 3D+time microscopy images. In BISTÁK, A. *Advances in Architectural, Civil and Environmental Engineering.* Bratislava: Spektrum STU, 2021, s. 39–45. ISBN 978-80-227-5150-6.

    Kľúčové slová: eikonal, image processing, cell tracking

RÜCKSCHLOSSOVÁ, T. – VAJSÁBLOVÁ, M. Geometria v profile absolventa stavebného odboru do roku 2030. In VELICHOVÁ, D. – LÁVIČKA, M. – SZARKOVÁ, D. *Proceedings of the Czech-Slovak Conference on Geometry and Graphics 2021.* Plzeň: Vydavateľský servis, 2021, s. 127–136. ISBN 978-80-86843-72-8.

Kľúčové slová: študijný program, aplikácie geometrie, akreditácia

SHEIKHI, A. – MESIAR, R. Nonlinear random forest classification using copula mutual information. In LUSA, L. – KASTRIN, A. *Applied Statistics 2021.* Ljubljana: Statistical Society of Slovenia, 2021, s. 71.

Kľúčové slová: mutual information, Random forest

STUPŇANOVÁ, A. – SU, Y. On some generalizations of homogeneity of aggregation functions. In MESIAR, R. – REFORMAT, M. – ŠTĚPNIČKA, M. – HURTÍK, P. *Joint Proceedings of the 19th World Congress of the International Fuzzy Systems Association (IFSA), the 12th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT), and the 11th International Summer School on Aggregation Operators (AGOP).* Dordrecht: Atlantis Press, 2021, s. 580–583. ISBN 978-94-6239-423-0.

Kľúčové slová: aggregation function, homogeneity, quasi-homogeneity

ŠELIGA, A. Some remarks on convolution of collection integrals. In MESIAR, R. – REFORMAT, M. – ŠTĚP-NIČKA, M. – HURTÍK, P. *Joint Proceedings of the 19th World Congress of the International Fuzzy Systems Association (IFSA), the 12th Conference of the European Society for Fuzzy Logic and Technology (EUSF-LAT), and the 11th International Summer School on Aggregation Operators (AGOP).* Dordrecht: Atlantis Press, 2021, s. 575–579. ISBN 978-94-6239-423-0.

Kľúčové slová: convolution, collection integral, aggregation functions

ŠIBÍKOVÁ, M. – MIKULA, K. – AMBROZ, M. – ČAHOJOVÁ, L. – JAROLÍMEK, I. – KOLLÁR, M. – OŽVAT, A A. – ŠUVADA, R. – ŠIBÍK, J. NaturaSat – program na identifikáciu a monitoring biotopov Natura 2000 pomocou diaľkového prieskumu Zeme. In *Ochrana prírody.* 2021, s. 17.

Kľúčové slová: Natura 2000, monitoring, diaľkový prieskum Zeme

VAJSÁBLOVÁ, M. Geometric aspects in mathematical foundations of cartography. In VELICHOVÁ, D. – LÁ-VIČKA, M. – SZARKOVÁ, D. *Proceedings of the Czech-Slovak Conference on Geometry and Graphics 2021.* Plzeň: Vydavatelský servis, 2021, s. 149–158. ISBN 978-80-86843-72-8.

Kľúčové slová: distortion, cartographic projection

ŽDÍMALOVÁ, M. Image processing in industry, engineering, civil and mechanical engineering. In FECKOVÁ ŠKRABUĽÁKOVÁ, E. *Towards Earth Resources: Challenges of the Automotive Industry.* Košice: Technical University of Košice, 2021, s. 21. ISBN 978-80-553-3830-9.

Kľúčové slová: computed tomography, image processing, segmentation

ŽDÍMALOVÁ, M. – KOPÁNI, M. – SOVA, O. – SVOBODOVÁ, H. – CHATTERJEE, A. Analysis of biological data by graph theory approach searching of iron in biological cells. In BORKOTOKEY, S. – KUMAR, R. *Game Theory and Networks.* Singapore: Springer Nature, 2021, s. 259–277. ISBN 978-981-16-4736-9.

Kľúčové slová: graph theory, biological cells

ŽDÍMALOVÁ, M. Patterns. In MAGNAGHI-DELFINO, P. – MELE, G. – NORANDO, T. *Faces of Geometry. II Edition.* Cham: Springer Nature, 2021, s. 313–322. ISBN 978-3-030-63701-9.

Kľúčové slová: pattern, Voronoi diagrams

ŽERAVÝ, M. – FROLKOVIČ, P. High-resolution semi-implicit method for numerical solution of 1D inviscid Bur-gers' equation. In BISTÁK, A. *Advances in Architectural, Civil and Environmental Engineering.* Bratislava:

Príspevky v zborníkoch, kapitoly v monografiách/učebniciach, abstrakty

Kľúčové slová: semi-implicit method, high-resolution method, Burgers' equation

Záverečná práca

BACHRATÝ, M. – ŠIRÁŇ, J. *Zovšeobecnené mnohouholníky a problém stupňa a priemeru.* Dizertačná práca. 2021.

    Kľúčové slová: moorovská hranica, generalised quadrangle, Moore bound, zovšeobecnené mnohouholníky, cayleyovský graf, Cayley graphs

BEHUN, M. – JENČA, G. *Dokazovanie viet v systéme Lean.* Diplomová práca. 2021.

    Kľúčové slová: teória čiastočného usporiadania, Curry-Howard isomorphism, proof assistant, Lean, asistent dokazovania, partial order theory, Curry-Howardov izomorfizmus

BEJDÁK, M. – ČUNDERLÍK, R. *Určovanie tiažového poľa Zeme pomocou okrajových metód s využitím hierarchických matíc.* Diplomová práca. 2021.

    Kľúčové slová: method of fundamental solutions, Hierarchické matice, určovanie tiažového pola Zeme, redukcia pamäťových nárokov, Hierarchical matrices, boundary element method, Earth's gravity field modeling, ACA algoritmus, metóda okrajových prvkov, ACA algorithm, memory requirements reduction, GOCE, metóda fundamentálnych riešení

BENCOVÁ, E. – TOMEK, L. *Počítačové spracovanie hudby: Beat tracking.* Bakalárska práca. 2021.

    Kľúčové slová: zvuková nahrávka, Fourierova transformácia, tempo, frekvencia, frequency, zvuk, sound recording, Fourier transform, sound

BERAN, B. – TOMEK, L. *Segmentácia mračien bodov z terestrického laserového skenera s využitím vyvíjajúcich sa kriviek.* Diplomová práca. 2021.

    Kľúčové slová: mračno bodov, point cloud, segmentácia, evolving curves, segmentation, vývoj kriviek

BOŠANSKÁ, B. – MINÁROVÁ, M. *Elasticita dýchacieho traktu.* Diplomová práca. 2021.

    Kľúčové slová: Nelinearita, Elasticity, Dýchanie, Elasticita, Nonlinearity, Breathing

CVEČKOVÁ, G. – ŠIPOŠOVÁ, A. *Porovnanie algoritmov na riešenie úlohy obchodného cestujúceho.* Bakalárska práca. 2021.

    Kľúčové slová: Christophides algorithm, problém obchodného cestujúceho, Christofidesov algoritmus, metóda vetiev a hraníc, travelling salesman problem, branch and bound

GAJDOŠOVÁ, N. – FROLKOVIČ, P. *Numerické metódy pre level set úlohy s použitím vzdialenostnej funkcie bez znamienka.* Diplomová práca. 2021.

    Kľúčové slová: rekonštrukcia interfejsu, eikonal equation, lineárna rovnica advekcie, linear advection equation, vzdialenostná funkcia, interface reconstruction, interfejs, indicator function, phase, indikačná funkcia, interface, eikonalova rovnica, rozhranie, distance function, fáza

HORANSKÁ, Ľ. *Nonadditive integrals as a tool for aggregation.* Habilitačná práca. 2021.

    Kľúčové slová: fuzzy miera, fuzzy measure, neaditívne integrály, nonadditive integrals, aggregation function, agregačná funkcia

Záverečná práca

JÁNOŠ, P. – ŠIAGIOVÁ, J. *Graph coverings in the degree-diameter problem and in the degree-girth problem.* Dizertačná práca. 2021.

Kľúčové slová: napäťové priradenie, graf, dipole, dipól, voltage assignment, group, lift, zdvih, grupa, graph

KOČONDA, I T. – VAJSÁBLOVÁ, M. *Aplikácia alternatívnych prístupov k tvorbe konformného kartografického zobrazenia pre územie Srbska.* Diplomová práca. 2021.

Kľúčové slová: extrémne, variačné a minimaximálne kritériá, kartografické zobrazenie, dĺžkové skreslenie, extrem, variational and minimaximal criterion, scale distortion, cartographic projection

KÓSA, B. – MIKULA, K. *Point cloud surface reconstruction and image segmentation by the level set method.* Dizertačná práca. 2021.

Kľúčové slová: level set method, surface reconstruction, point cloud data, rekonštrukcia plochy, výpočet funkcie vzdialenosti, segmentácia obrazu, image segmentation, mračno bodov, level set metóda, microscopic 3D images, distance function calculation, mikroskopické 3D obrázky

KRASŇANSKÝ, J. – KRIVÁ, Z. *Segmentácia biologických dát na adaptívnych sieťach.* Diplomová práca. 2021.

Kľúčové slová: adaptívna diskretizácia, macrophages, segmentácia, nerovnomerné siete, adaptive discretization, non-uniform grids, p4est, makrofágy, spracovanie obrazu, image processing, segmentation

LACKOVÁ, K. – FROLKOVIČ, P. *Numerické metódy pre niektoré level set rovnice s krivostným členom.* Diplomová práca. 2021.

Kľúčové slová: numerická aproximácia, upwind numerické schémy, eikonal equation with regularization curvature term, eikonalova rovnica s regularizačným krivostným členom, metódy úrovňovej množiny, level set methods, upwind numerical schemes, numerical approximation

MÉSZÁROSOVÁ, R. – STANEKOVÁ, Ľ. *Priemer a iné vzdialenosti v grafoch.* Diplomová práca. 2021.

Kľúčové slová: priemer, Graph, Bfs, path, diameter, eccentricity, cesta, excentricita, Graf

MINARECHOVÁ, Z. *Vybrané numerické metódy na riešenie geodetických okrajových úloh so šikmou deriváciou.* Habilitačná práca. 2021.

Kľúčové slová: finite element method, metóda konečných prvkov, metóda konečných objemov, Oblique derivative boundary value problem in geodesy, Geodetická okrajová úloha so šikmou deriváciou, finite volume method

OKOCK, P O. – MIKULA, K. *Efficient software solutions for medical image processing and analysis.* Dizertačná práca. 2021.

Kľúčové slová: Segmentácia, Registrácia, nafukovací člen, Atlas, Inflation Term, Estimation, Segmentation, Odhad, Registration

RIABOV, N. – BACIGÁL, T. *Stochastic models of dependence with unobserved variables.* Bakalárska práca. 2021.

Kľúčové slová: metóda hlavných komponentov, principal components method, rotácia faktorov, faktorová analýza, factor rotation, factor analysis

ROHOVÁ, M. – FROLKOVIČ, P. *Využitie diferencovateľného programovania pre numerické metódy v prostredí PyTorch.* Bakalárska práca. 2021.

Kľúčové slová: gradient descent, PyTorch, differentiable programming, advection equation, rovnica advekcie, gradientná metóda, diferencovateľné programovanie

SCHWARZOVÁ, P. – MACÁK, M. *Metóda nekonečných prvkov ako nástroj riešenia geodetickej okrajovej úlohy.* Diplomová práca. 2021.

Kľúčové slová: geodetická okrajová úloha, Finite element method, geodetic boundary-value problem, nekonečné elementy, disturbing potential, infinite elements, Metóda nekonečných elementov, poruchový potenciál, Infinite element method, Metóda konečných prvkov

ŠELIGA, A. – MESIAR, R. *Generalized measure theory and theory of integrals and their applications.* Dizertačná práca. 2021.

Kľúčové slová: rozšírenie Lebesgueovho integrálu, integrálna nerovnosť, dolná koherentná prevízia, transformácia agregačných funkcií, decomposition integral, extension of Lebesgue integral, horná koherentná prevízia, aggregation function, integral inequality, coherent upper prevision, transformation of aggregation functions, integrál na kolekciách, collection integral, coherent lower prevision, dekompozičný integrál, agregačná funkcia

ŠTEFANEC, M. – KOLLÁR, M. *Nové metódy automatickej segmentácie satelitných snímok.* Diplomová práca. 2021.

Kľúčové slová: automatic segmentation, co-occurence matrix, prahovací algoritmus, evolúcia krivky, matica opakovaných výskytov, automatická segmentácia, curve evolution, thresholding

VARHANÍK, M. – ŠELIGA, A. *Polynomické kopule stupňa 5 a ich odhad.* Bakalárska práca. 2021.

Kľúčové slová: distribučná funkcia, path-following metóda, distribution function, path-following method., polynomické kopule, EFGM kopule, polynomial copulas, EFGM copulas

ZAJÍCOVÁ, S. – MINÁROVÁ, M. *Reťazové a rekurentné viskoelastické štruktúry.* Diplomová práca. 2021.

Kľúčové slová: viscoelastic materials, konštitutívne vzťahy, algoritmizácia, load tests, väzkopružné materiály, constitutive equations, viscoelastic models, viskoelastické modely, záťažové testy, algorithmization

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