

DEPARTMENT OF MATHEMATICS AND DESCRIPTIVE GEOMETRY

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I. STAFF

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Technical Staff

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II. EQUIPMENT**II.1 Teaching and Research Laboratories**

Computer Laboratory

II.2 Special Measuring Instruments and Computers

15 x PC 586, 10 x PC 486, 2 x PC 386

III. TEACHING**III.1 Graduate Study**

Subject	Semester	Hours Per Week		Lecturer
		Lectures	Seminars	
Mathematics I	1	3 - 3		I. Žembery K. Trokanová
Mathematics II	2	3 - 3		I. Žembery K. Trokanová
Descriptive Geometry	1	2 - 2		D. Szökeová D. Kyselová
Descriptive Geometry	2	2 - 2		A. Szittayová D. Szökeová
Mathematics I	1	4 - 4		M. Kalina
Mathematics II	2	4 - 5		J. Širáň M. Kalina A. Stupňanová
Descriptive Geometry	1	2 - 3		V. Zaťková E. Valášková Z. Havranová
Mathematics I	1	3 - 3		M. Komorníková
Mathematics II	2	3 - 3		M. Komorníková
Mathematics III	3	3 - 3		A. Handlovičová
Descriptive Geometry	2	2 - 2		M. Vajsáblová
Descriptive Geometry	3	2 - 2		M. Vajsáblová

Mathematics	7	2 - 2	A.Handlovičová R. Mesiar
Applied Mathematics	7	2 - 1	A.Handlovičová O. Nánásiová
Mathematics	7	2 - 3	A.Handlovičová R. Mesiar
Mathematical Statistics	7	2 - 2	J. Kalická
Mathematical Statistics	8	2 - 2	J. Kalická J. Šiagiová
Mathematics in Architecture	10	2 - 1	D. Szökeová A.Handlovičová
Measurement and Data Processing Theory	7	2 - 2	O. Nánásiová
Engineering Geometry and AutoCAD	3	0 - 2	H. Bašová
Engineering Geometry and AutoCAD	4	0 - 2	H. Bašová

III.2 Postgraduate Study

Subject	Semester	Hours Per Semester	Lecturer
Numerical Methods I	1	52	M. Komorníková
Numerical Methods II	2	52	M. Komorníková
Mathematical Methods in Fluid Flow, Diffusion and Heat Transfer I	1	52	K. Mikula
Mathematical Methods in Fluid Flow, Diffusion and Heat Transfer II	2	52	K. Mikula
Mathematical Basis of a Finite Element Method I	1	52	K. Mikula
Mathematical Basis of a Finite Element Method II	2	52	K. Mikula
Stochastic Processes I.	1	52	M. Kalina
Applied Statistics I.	1	52	O. Nánásiová
Applied Statistics II.	2	52	O. Nánásiová
Uncertainty Modelling	2	52	R. Mesiar
Theory of Measure and Integral	1	52	R. Mesiar
Fuzzy Logic	2	52	R. Mesiar
Algebraic Theory of Graphs	1	52	J. Širáň
Probabilistic Modelling	2	52	J. Širáň
Proposed Experiment in Optimisation	1	52	M. Komorníková
Time Series Analysis in Civil Engineering	2	52	M. Komorníková

IV. RESEARCH TARGETS

1. Fuzzy Sets - Theory and Applications
2. Numerical Analysis of Nonlinear Partial Differential Equations with Applications in:
 - Flow-in Porous Medium
 - Free Boundary Problems
 - Image Processing
3. Topological Graph Theory
4. Time Series Analysis

5. Mathematica - Applications in Engineering and Economic Problems
6. Computer Graphics
7. Non-Standard Measure and Integral Theory
8. Aggregation Operators

V. RESEARCH PROJECTS

- [1] Uncertainty Modelling: Theory and Application (2003 - 2005, Komorníková, M.)
- [2] CEEPUS SK - 42 "Fuzzy Control" (2001 - 2004, Mesiar R.)
- [3] Efficient Computational Methods in Engineering Sciences and Applications (2003 - 2005, Mikula K.)
- [4] Metric and Topological Properties of Oriented, Non-Oriented and Labelled Graphs (2003 – 2005, Širáň J.)
- [5] Slovak – German Cooperative Project “Nets and Their Applications“ (2002 – 2004, Širáň J.)
- [6] Slovak – USA Cooperative Project “Symmetries and Network Designs (2002 – 2004, Širáň J.)
- [7] Leverhulm Trust Grant “Topological Design Theory“, 2003 – 2005, Sub-Coordinator Knor, M.
- [8] Theory and Applications of Relational Structures as Instruments of Knowledge (TARSKI COST 274, 2001-2005, Mesiar R.)
- [9] Triangular Norms (Action Austria – Slovakia 42s2, 2003 – 2004, Mesiar, R.)
- [10] Multi-Criteria Decision Making in Civil Engineering Using Subjective Input Data (2001-2003, Mesiar R.)
- [11] NATO Collaborative Linkage Grant PST.CLG.979123 Efficient and Robust Computational Methods for Biomedical Image Analysis, 2002 – 2004, Sub-Coordinator Mikula K.
- [12] Slovak – Czech Cooperative project 124/159 Modern Methods of Mathematical Modelling and Numerical Simulation of Technological and Scientific Processes, (2002 – 2003, Mikula K.)

VI. COOPERATION

VI.1 Cooperation in Slovakia

1. Faculty of Management, Comenius University, Bratislava
2. Faculty of Mathematics and Physics, Comenius University, Bratislava
3. Institute of Mathematics, Slovak Academy of Sciences, Bratislava
4. Military Academy, Liptovský Mikuláš
5. Faculty of Electrical Engineering and Informatics, SUT Bratislava
6. Technical University, Zvolen
7. Faculty of Management, University of Žilina
8. GEOSAN s.r.o., Bratislava
9. Faculty of Chemical Engineering and Food Technology, SUT Bratislava

VI.2 International Cooperation

1. University of Linz, Austria
2. University of Novi Sad, Yugoslavia
3. University of Haifa, Israel
4. CTU Prague, Czech Republic
5. University of Ostrava, Czech Republic
6. University of Liberec, Czech Republic
7. WB University, Plzeň, Czech Republic
8. Czech Academy of Sciences, Czech Republic
9. University of Ghent, Belgium
10. TU Budapest, Hungary
11. University of Waterloo, Canada
12. University of Central Lancashire, Preston, U.K.
13. University of Freiburg, Germany
14. University of Bremen, Germany
15. University of Heidelberg, Germany
16. University of Vermont, Burlington, VT, USA
17. University of California, Berkeley, CA, USA
18. University of Newcastle, Australia
19. University of Bologna, Italy
20. CINECA – Supercomputing Centre, Bologna, Italy
21. University of Gröningen, the Netherlands
22. University of the Balearic Islands, Palma de Mallorca, Spain
23. La Sapienza University, Rome, Italy
24. Syracuse University, Syracuse, NY, USA
25. University of Dortmund, Germany
26. Weierstrass Institute for Applied Analysis and Stochastics, Berlin, Germany
27. Western Australia University, Perth, Australia
28. University of Auckland, New Zealand
29. TU Cracow, Poland
30. Pohang University of Science and Technology, South Korea
31. Western Washington University, Bellingham, WA, USA
32. McMaster University, Hamilton, Canada

VI.2.1 Visitors to the Department

1. Ing. CHALUPECKÝ, CTU Prague, Czech Republic, June 2003
2. Ing. MINÁRIK, CTU Prague, Czech Republic, June 2003
3. Doc. BENEŠ, CTU Prague, Czech Republic, November 2003
4. Dr. TIKK, Hungary, June 2003
5. Ing. KOWALCZYK, Poland, April 2003
6. Prof. KULCZYCKI, Poland, April 2003
7. Prof. KLEMENT, Austria, April 2003
8. Dr. SAMINGER, Austria, April 2003
9. Dr. SAMINGER, Austria, June 2003
10. Prof. KLEMENT, Austria, August 2003
11. Dr. TKADLEC, CTU Prague, July 2003
12. Prof. PTÁK, CTU Prague, June 2003
13. Prof. GRIGGS, Open University, England, February - March 2003

14. Prof. GRANNELL, Open University, England, February - March 2003

VI.2.2 Visits of Staff Members and Postgraduate Students to Foreign Institutions

1. ČUNDERLÍK, R.

- Institute of Mathematical and Computational Modelling, Warsaw University, and Stefan Banach Center for Mathematics, Warsaw, Poland, 1 month
- CTU Prague, Czech Republic, 1 week

2. DRBLÍKOVÁ, O.

- CTU Prague, Czech Republic, 2 weeks

3. IPOLYIOVÁ, M.,

- University of Ostrava, Czech Republic, June 2003, 1 month

4. HANDLOVIČOVÁ, A., ICM, Institute of Mathematical and Computational Modelling, Warsaw University, and Stefan Banach Center for Mathematics, Warsaw, Poland, 1 month

5. KALINA, M.

- TH Zittau, Germany, September 2003, 4 days
- University of Alcalá, Spain, July 2003, 6 days
- CTU Prague, Czech Republic, June 2003, 1 month

6. KNOR, M,

- The Open University, Milton Keynes, England, May 2003, 2 weeks
- TU Ilmenau, Germany, December 2003, 1 week

7. KRIVÁ, Z.

- ICM, Institute of Mathematical and Computational Modelling, Warsaw University and Stefan Banach Center for Mathematics, Warsaw, Poland, 1 month
- University of Bologna, Italy, 10 days

8. LIŠKOVÁ, E., University of Ostrava, Czech Republic, June 2003, 1 month

9. MESIAR, R.

- University of Alcalá, Spain, April 2003, 6 days
- University of Dortmund, Germany, May 2003, 6 days
- JKU Linz, Austria, June 2003, 8 days
- JKU Linz, Austria, February 2003, 1 week
- JKU Linz, Austria, November 2003, 1 month
- IHS Zittau, Germany, September 2003, 4 days

10. MIKULA, K.

- IWR, Interdisciplinary Center for Scientific Computing, University of Heidelberg, Germany, 2003, 1 month

- Isaac Newton Institute for Mathematical Sciences, University of Cambridge, UK, 2003, 1 month
 - ICM, Institute of Mathematical and Computational Modelling, Warsaw University, and Stefan Banach Center for Mathematics, Warsaw, Poland, 1 month
 - CTU Prague, Czech Republic, 1 week
11. MORDELOVÁ, J., TU Cracow, Poland, June 2003, 1 month
12. ŠIRÁŇ, J.
- The Open University, Milton Keynes, England, February 2003, 2 weeks
 - Colgate University, Hamilton, USA, March 2003, 3 weeks
 - Kansas State University, Kansas, USA, May 2003, 2 weeks
 - Syracuse University, N.Y., USA, October 2003, 3 weeks
 - Kansas State University, Kansas, USA, November 2003, 2 weeks
13. NÁNÁSIOVÁ, O.,
- Vaxjo University, Sweden, 3 weeks
 - CTU Prague, Czech Republic, 4 days
14. ŠIAGIOVÁ, J.
- Syracuse University, N.Y., USA, February - June 2003
 - Syracuse University, N.Y., USA, October - November 2003
15. RÜCKSCHLOSSOVÁ, T., TU Cracow, Poland, June 2003, 1 month
16. STRUK, P., University of Ostrava, Czech Republic, June 2003, 1 month
17. VALÁŠKOVÁ, E., University of Ostrava, Czech Republic, June 2003, 1 month
18. VICENÍK, P., JKU Linz, Austria, October 2003, 5 days

VII. THESES

VII.1 Graduate Theses

1. KRIVÁ, Z.: Adaptive Finite Volume Methods in Image Processing. PhD., FEI STU, Bratislava, 2003 (in English)
2. RÜCKSCHLOSSOVÁ, T.: Aggregation Operators and Invariantness. PhD., SvF STU, Bratislava, 2003 (in English)

VIII. OTHER ACTIVITIES

VIII.1 Special Lectures

i) In Slovak

- [1] BOHDALOVÁ, M. - NÁNÁSIOVÁ, O.: Simulation and Possibilities of the SAS Software Package. Seminar on Quantitative Methods in Economics, Bratislava, November 13 –14, 2003
- [2] IPOLYIOVÁ, M.: Minimal Polynomial for $2 \cos(\pi/p)$ and Its Application to Regular Maps of a Large Planar Width. Topological Graph Theory Seminar, SvF STU Bratislava, April 3, 2003.
- [3] KALICKÁ, J. – NÁNÁSIOVÁ, O.: Simulation Studies of Estimates of Parameters in Linear Models and Time Series. The MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003
- [4] KALINA, M.: Topological Properties of the Nearness Relation in Linear Spaces. The MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003
- [5] KNOR, M.: Affinity, Colinearity and Matrices. Descriptive Geometry Seminar, SvF STU Bratislava, February 26, 2003.
- [6] KNOR, M.: Regular Orientable Reflexible Embeddings of $K_{n,n}$ and $K_{n,n,n}$. Graph Theory Seminar, SvF STU Bratislava, November 12, 2003
- [7] KNOR, M.: Face 2-Colourable Triangulations of $K_{n,n,n}$ and Bi-Embeddings of Latin Squares. Graph Theory Seminar, FMFI UK Bratislava, April 10, 2003.
- [8] KNOR, M.: Ears and Ear Decomposition, Angles, Squares and Bars. Graph Theory Seminar, FMFI UK Bratislava, November 6, 2003.
- [9] KOMORNÍKOVÁ, M.: Trends in Modelling Financial Time Series. Commemorative Conference on 35 Years of the Slovak Statistical and Demographic Society, Bratislava, March 25, 2003
- [10] LÍŠKOVÁ, Ľ.: Cayley Maps and Their Exponents. MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003
- [11] LÍŠKOVÁ, Ľ.: Cayley Maps with a Given Distribution of Inverse Elements and Exponents. Graph Theory Seminar, FMFI UK Bratislava, December 11, 2003.
- [12] MESIAR, R.: First Shreds in Decision Theory. Seminar on Non-Standard Mathematical Methods, Bratislava, SvF STU, March 5, 2003
- [13] MESIAR, R.: Second Shreds in Decision Theory. Seminar on Non-Standard Mathematical Methods, Bratislava, SvF STU, March 12, 2003
- [14] MESIAR, R.: Third Shreds in Decision Theory. Seminar on Non-Standard Mathematical Methods, Bratislava, SvF STU, March 19, 2003
- [15] MINÁROVÁ, M.: Temperature, Humidity and Moulds. MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003
- [16] NÁNÁSIOVÁ, O.: Convergence on D-posets - Mathematical Models and Their Applications. Department of Mathematics, Military Academy, Liptovský Mikuláš, February 24, 2003

- [17] NÁNÁSIOVÁ, O.: Marginality and OML. Seminar on Non-Standard Mathematical Methods, Bratislava, SvF STU, April 2, 2003
- [18] STUPŇANOVÁ, A.: A Rule of Division of the Sums of Fuzzy Numbers. Seminar on Non-Standard Mathematical Methods, Bratislava, SvF STU, December 3, 2003
- [19] STUPŇANOVÁ, A.: Sums of Fuzzy Numbers and Their Limits. Seminar on Non-Standard Mathematical Methods, Bratislava, SvF STU, May 2003
- [20] SZŐKEOVÁ, D.: Cubic Interpolation Curves. MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003
- [21] SZŐKEOVÁ, D.: Bounded Methods in Linear Perspective. Geometry and Its Applications Seminar, Bratislava, 30.1.2003
- [22] ŠIRÁŇ, J.: Education of Mathematics on Four Continents. MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003 (invited lecture)
- [23] VAJSÁBLOVÁ, M.: Perspective and Photogrammetry. The Geometry and Its Applications Seminar, Bratislava, 2003
- [24] VAJSÁBLOVÁ, M.: Projection on Special Surfaces. MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003
- [25] VALÁŠKOVÁ, Ľ.: Symmetrical Fuzzy Measures. Seminar on Non-Standard Mathematical Methods, Bratislava, SvF STU, April 9, 2003
- [26] VICENÍK, P.: Triangular Norms and Their Additive Generators. Seminar on Non-Standard Mathematical Methods, Bratislava, SvF STU, December 10, 2003

ii) In English

- [1] BOGNÁR, T.: SETAR Models Applied to Geodesy. ISCAM 2003 Conference, Slovak University of Technology, Bratislava, Slovak Republic, April 11-12, 2003
- [2] CALVO, T. – MESIAROVÁ, A. – VALÁŠKOVÁ, Ľ.: Composition of Aggregation Operators – One More New Construction Method. The AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003
- [3] IPOLYIOVÁ, M.: On the Smallest Regular Maps of Type $\{p,3\}$ of a Large Planar Width. Conference on Mathematics, Geometry and Their Applications – MAGIA 2003, Kočovce, June 6 – 8, 2003
- [4] IPOLYIOVÁ, M.: The Minimal Polynomial of $2 \cos(\pi/p)$ and Regular Maps of a Large Planar Width. Czech and Slovak Conference on Graph Theory and Combinatorics 2003, Javorná, Czech Republic, June 2 – 6, 2003
- [5] IPOLYIOVÁ, M.: The Minimal Polynomial of $2 \cos(\pi/p)$ and Regular Maps of a Large Planar Width. ISCAM 2003 Conference, Slovak University of Technology, Bratislava, Slovak Republic, April 11-12, 2003.
- [6] KALICKÁ, J. – NÁNÁSIOVÁ, O. – TROKANOVÁ, K. – VAJSÁBLOVÁ, M.: eLearning of Mathematics and Geometry at Slovak Technical University, Developments in e-Learning 2003, Prague, September 17 – 19, 2003
- [7] KALINA, M. – NÁNÁSIOVÁ, O.: Construction of Joint Distributions on MV-Algebras via Conditional Distributions. The 2d Workshop on Mathematical Structures for Nonstandard Logics, Prague, December 12, 2003.

- [8] KALINA, M.: Conditioning on MV-Algebras, Zuberec, May 1 – 3, 2003
- [9] KALINA, M.: Coordinate-Wise Aggregation of Nearness Relations. AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003
- [10] KALINA, M.: Nearness Relations and Topology. 3d EUSFLAT Conference, Zittau 2003, September 10 – 12, 2003
- [11] KLEMENT, E. P. - MESIAR, R. – PAP, E.: Copulas: Uniform Approximation, Invariance and Applications in Aggregation. The 24th Linz Seminar on Fuzzy Set Theory, Triangular Norms and Related Operators in Multi-Valued Logics, Linz, Austria, February 4 – 8, 2003
- [12] KLEMENT, E.P. – MESIAR, R. – PAP, E.: Triangular Norms: Some Open Problems. 24th Linz Seminar on Fuzzy Set Theory, February 4 – 8, 2003, Linz (2003)
- [13] KNOR, M.: Bi-Embeddings of Latin Squares. Open University, Milton Keynes, United Kingdom, May 21, 2003 (invited lecture)
- [14] KNOR, M.: Face 2-Colourable Triangulations of $K_{n,n,n}$ and Bi-Embeddings of Latin Squares. GRAPHS 2003 Conference, Javorná, Czech Republic, June 2003
- [15] KNOR, M.: Face 2-Colourable Triangulations of $K_{n,n,n}$ and Bi-Embeddings of Latin Squares. Graph Theory Seminar, TU Ilmenau, Germany, December 10, 2003
- [16] KOLESÁROVÁ, A. – MORDELOVÁ, J. – MUEL, E.: A Review of Binary Kernel Aggregation Operators. AGOP '2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003
- [17] KOMORNÍK, J. – KOMORNÍKOVÁ, M. – MESIAROVÁ, J.: Crisp and Fuzzy Regimes-Switching Models for Exchange Rates of the Slovak Crown to the Euro. 10th IFSA World Congress - IFSA 2003, Istanbul, Turkey, June 29 – July 2, 2003
- [18] LÁZARO, J. - RÜCKSCHLOSSOVÁ, T.: Some Types of the Invariantness of Aggregation Operators. AGOP '2003 Conference, Alcalá de Henares, Spain, July 14 – 16, 2003
- [19] LÍŠKOVÁ, Ľ.: Cayley Maps and Their Exponents. The Czech and Slovak Conference on Graph Theory and Combinatorics 2003, Javorná, Czech Republic, June 2 – 6, 2003
- [20] LÍŠKOVÁ, Ľ.: Cayley Maps and Their Exponents. ISCAM 2003 Conference, Slovak University of Technology, Bratislava, Slovak Republic, April 11-12, 2003
- [21] LÍŠKOVÁ, Ľ.: Cayley Maps, Exponents and Distribution of Inverses. PhD. Student Competition, November 24, 2003, Svf STU, Slovak Republic
- [22] MESIAR, R. - SAMINGER, S.: Commuting Aggregation Operators. EUSFLAT 2003 Conference, Zittau, Germany, September 10 – 12, 2003
- [23] MESIAR, R. - VALÁŠKOVÁ, Ľ.: Universal Fuzzy Measures. 10th IFSA World Congress - IFSA 2003, Istanbul, Turkey, June 29 – July 2, 2003
- [24] MESIAR, R. – VIVONA, D.: Fuzzy Measures and Integrals: On the Contribution of Prof. Benvenuti. AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003
- [25] MESIAR, R. – VIVONA, D.: Pietro Benvenuti's Results on Aggregation Operators. AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003
- [26] MESIAR, R.: A Fuzzy Approach to Preference Modeling in MCDM. Workshop on Principles of Fuzzy Modelling and Decision Making, Het Pand, Ghent, Belgium, December 1 – 3, 2003

- [27] MESIAR, R.: Aggregation Operators 2003. EUSFLAT 2003 Conference, Zittau, Germany, September 10 – 12, 2003
- [28] MESIAR, R.: Aggregation Operators: Where Do They Come From? 3rd WISC, Warsaw, Poland, November 2003
- [29] MESIAR, R.: Copulas: Some Properties and Applications. SIU Győr, Hungary, June 2, 2003
- [30] MESIAR, R.: Criteria Importance in Decision Making. 4th International Workshop on Preferences and Decisions, TRENTO 2003, Trento, Italy, September 23 – 26, 2003
- [31] MESIAR, R.: Fuzzy Measures and Probability. FLLL/SCCH Master and PhD Seminar, January 31, 2003
- [32] MESIAR, R.: Measures and Integrals in Decision Making. University of Dortmund, Germany, May 20, 2003
- [33] MIKULA, K.: Finite Volume Schemes in Image Processing. Conference on Advances in Numerical Algorithms, Graz, Austria, 2003 (invited lecture)
- [34] MIKULA, K.: Image Processing with Partial Differential Equations. Seminar on Applied Analysis and Mechanics, Mathematical Institute, University of Oxford, UK, 2003
- [35] MIKULA, K.: Image Segmentation by Geometrical PDEs. Department of Mathematics, University of Duisburg, Germany, 2003
- [36] MIKULA, K.: Medical Image Segmentation by Weighted Mean Curvature Flow. ICM, Institute of Mathematical and Computational Modelling, Warsaw University, Warsaw, Poland, 2003
- [37] MIKULA, K.: Finite Volume Methods in Image Processing. Department of Mathematics FJFI ČVUT, Prague, Czech Republic, 2003
- [38] NÁNÁSIOVÁ, O.: International Conference on Quantum Theory: Consideration of Foundations –2. Vaxjo University, Sweden, June 1 – 6, 2003 (invited lecture)
- [39] RÜCKSCHLOSSOVÁ, T.: Shift Invariant, Homogeneous and Affine-Stable Aggregation Operators. The ISCAM 2003 Conference, Slovak University of Technology, Bratislava, Slovak Republic, April 11-12, 2003
- [40] ŠIAGIOVÁ, J. – WATKINS, M.: Infinite Planar Vertex-Transitive and Cayley Maps with a Given Covalence Vector. 5th International Conference on Graph Theory, Lake Bled, Slovenia, June 25-29, 2003
- [41] ŠIAGIOVÁ J.: Covalence Sequences of Planar Vertex-Homogeneous Maps. The Seminar on Combinatorics, Department of Mathematics, Syracuse University, NY, USA, December 4, 2003
- [42] ŠIAGIOVÁ, J.: The Degree-Diameter Problem and the Composition of Regular Coverings. MGO Colloquium, Syracuse University, NY, USA, January 31, 2003
- [43] ŠIAGIOVÁ, J.: Voltage Assignments in the Degree-Diameter Problem. MGO Colloquium, Syracuse University, USA, NY, March 2003
- [44] ŠIRÁŇ, J.: Classification of Regular Maps of Negative Prime Euler Characteristics. 5th International Conference on Graph Theory, Lake Bled, Slovenia, June 25-29, 2003
- [45] ŠIRÁŇ, J.: Regular Maps on the Surfaces of Negative Prime Euler Characteristics. Colloquium, Kansas State University, KS, USA, May 4, 2003 (invited lecture)

- [46] VICENÍK, P.: Generalizations of Some Constructions of Triangular Norms. 24th Linz Seminar on Fuzzy Set Theory, Triangular Norms and Related Operators in Multi-Valued Logics, Linz, Austria, February 4 – 8, 2003.
- [47] VICENÍK, P.: Generalizations of Some Constructions of Triangular Norms. ISCAM 2003 Conference, Slovak University of Technology, April 11 – 12, 2003.

IX. PUBLICATIONS

IX.1 Journals

Other Scientific Papers in Slovakia:

- [1] BOGNÁR, T.: SETAR Models Applied to Geodesy. Journal of Electrical Engineering, Vol. 54, No. 12/s, 2003, pp. 17 - 19
- [2] LÍŠKOVÁ, Ľ.: Cayley Maps and Their Exponents. Journal of Electrical Engineering, Vol. 54, No. 12/s, 2003, pp. 54 - 56
- [3] UNGVARSKÝ, C. – MIKULA, K.: Numerical Solution of Two Factor Model for Option Pricing with Stochastic Volatility. Journal of Electrical Engineering, Vol. 54, No. 12/s, 2003, pp. 24-28
- [4] VAJSÁBLOVÁ, M.: Geodetic Curves, Orthodroms and Loxodroms in Mapping. G – geometria a grafika, Slovak Society for Geometry and Graphics, Bratislava, 2003

Other Scientific Papers Abroad (Journals):

- [1] MESIAR, R.: k-Order Additivity and Maxitivity. Atti Seminar on Mathematics and Physics, University of Modena, LI, 2003, pp. 179 – 189
- [2] MESIAR, R.: k-order Additive Fuzzy Measures: New Tools for Uncertainty Modelling. MINT 8 (2003) 89 – 98
- [3] NÁNÁSIOVÁ O.: Principle Conditioning, arXiv.org/abs/math-ph/3006031

Scientific Papers Abroad in “Current Contents” Journals:

- [1] ALDRED, R. - ŠIRÁŇ, J. - ŠIRÁŇ, M.: A Note on the Number of Graceful Labellings of Paths. Discrete Mathematics 261, 2003, pp. 27-30
- [2] ARCHDEACON, D. – FRONCEK, D. - JAJCAY, R. – RYJACEK, Z. - ŠIRÁŇ, J.: Regular Clique Covers of Graphs. Australasian Journal of Combinatorics 27, 2003, 1, pp. 307-316
- [3] BOUCHON-MEUNIER, B. – MESIAR, R. – MARSALA, C. – RIFQI, M.: The Compositional Rule of Inference as an Analogical Scheme. Fuzzy Sets and Systems 138, 2003, pp. 53 – 65
- [4] BOUCHON-MEUNIER, B. – MESIAR, R. – RALESCU, D. A.: Linear Non-Additive Set Functions. International Journal of General Systems 33 (1) (2003), pp. 89 – 98

- [5] BRANKOVIC, L. - MILLER, M. - ŠIRÁŇ, J.: On Range Query Usability of Statistical Databases. *International Journal of Computational Mathematics* 79, No. 12, 2002, pp.1265-1271.
- [6] CALVO, T. – MESIAROVÁ, A. – VALÁŠKOVÁ, E.: Construction of Aggregation Operators – A New Composition Method. *Kybernetika*, 2003, pp. 643 - 650
- [7] CALVO, T. - MESIAR, R.: Aggregation Operators: Ordering and Bounds. *Fuzzy Sets and Systems* 139, No. 3, 2003, pp. 685 – 698
- [8] CALVO, T. - MESIAR, R.: Weighted Triangular Norm-Based Aggregation Operators. *Fuzzy Sets and Systems* 137, 2003, pp. 3 – 10
- [9] GRANNELL, M. – GRIGGS, T. – KORZHIK, V. - ŠIRÁŇ, J.: On the Minimal Non-Zero Distance Between Triangular Embeddings of a Complete Graph. *Discrete Mathematics* 269, Nos. 1-3, 2003, pp. 149-160
- [10] HANDLOVIČOVÁ, A. - MIKULA, K. – SGALLARI, F.: Semi-Implicit Complementary Volume Scheme for Solving Level Set Like Equations in Image Processing and Curve Evolution. *Numerische Mathematik*, Vol. 93, No. 4, 2003, pp. 675-695
- [11] KNOR, M. - NIEPEL, L.: Connectivity of Iterated Line Graphs. *Discrete Applied Mathematics* 125, 2003, pp. 235-266
- [12] MIKULA, K. – SGALLARI, F.: Semi-Implicit Finite Volume Scheme for Image Processing in 3D Cylindrical Geometry. *Journal of Computational and Applied Mathematics*, Vol. 161, No. 1, 2003, pp. 119-132
- [13] NÁNÁSIOVÁ O.: Map for Simultaneous Measurements for Quantum Logic. *International Journal of Theoretic Physics*, Vol. 42, 2003, pp.1989-1903
- [14] SAMINGER, S. - MESIAR, R.: A General Approach to Decomposable Bi-Capacities. *Kybernetika* 39, 2003, pp. 631-642
- [15] ŠIAGIOVÁ, J. – MESZKA, M.: Packing of a Hoffman-Singleton Graph into K_{50} . *Journal of Combinatorial Design* 11, 2003, pp. 408-412
- [16] ŠIAGIOVÁ, J.: Composition of Regular Coverings of Graphs and Voltage Assignments. *Australasian Journal of Combinatorics* 81, 2003, pp. 131-136

Contributions to Proceedings in Slovakia:

- [1] BOGNÁR, T. – KOMORNÍKOVÁ, M.: Modelling of a Geodetic Time Series by Nonlinear Two-Regime Models. *Proceedings of the MAGIA 2003 Conference*, Kočovce, June 6 – 8, 2003, pp. 61 – 70 (in Slovak)
- [2] BOGNÁR, T.: SETAR Models Applied to Geodesy. *Abstracts, ISCAM 2003 Conference*, Slovak University of Technology, April 11-12, 2003, p. 6
- [3] BOHDALOVÁ, M. – NÁNÁSIOVÁ, O.: Simulation and Possibilities of the SAS Software Package. *Proceedings of Quantitative Methods in Economics Conference*, November 13 –14, 2003, pp. 325-330 (in Slovak)
- [4] DOBRAKOVÁ, J. – KALINA, M.: On Nearness in Normed Spaces. *Proceedings of Seminar on Fuzzy Sets and Quantum Structures, KM FCHPT STU, Bratislava 2003*, pp. 6-11

- [5] HAVRANOVÁ, Z.: Normal Forms and Truth Tables for Fuzzy Logic, Proceedings of Uncertainty Modelling '2003, Bratislava, 2003, pp. 40 - 47
- [6] IPOLYIOVÁ, M.: The Minimal Polynomial of $2 \cos(\pi/p)$ and Regular Maps of a Large Planar Width. Abstracts, ISCAM 2003 Conference, Slovak University of Technology, April 11-12, 2003, p. 12
- [7] KALICKÁ, J. – NÁNÁSIOVÁ, O.: Simulation Studies of Estimates of Parameters in Linear Models and Time Series. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 71 – 75 (in Slovak)
- [8] KALINA, M.: Topological Properties of the Nearness Relation in Linear Spaces. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 12-16 (in Slovak)
- [9] KNOR, M. - NIEPEL, L.: Line Graphs as Models of Fault-Tolerant Networks. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 17-26
- [10] KOMORNÍK, J. - KOMORNÍKOVÁ, M.: Trends in Modelling Financial Time Series. Proceedings of the Commemorative Conference on 35 Years of Slovak Statistical and Demographic Society, Bratislava, March 25, 2003, pp. 73 – 83 (in Slovak)
- [11] KRIVÁ, Z. – HANDLOVIČOVÁ, A.: Numerical Solution of the Perona-Malik Equation by a Finite Volume Scheme. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 27-32
- [12] KYSELOVÁ, D.: Orders on $U[0, 1]^n$, Proceedings of Uncertainty Modelling '2003, Bratislava, 2003, pp. 34 - 39
- [13] LÍŠKOVÁ, E.: Cayley Maps and Their Exponents. Abstracts, ISCAM 2003 Conference, Slovak University of Technology, April 11-12, 2003, p. 21
- [14] LÍŠKOVÁ, E.: Exponents of One-Vertex Cayley Maps. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 33-37
- [15] MESIAR, R.: Preference Structures and Aggregation Operators Based on Fuzzy Quantities, Proceedings of Uncertainty Modelling '2003, Bratislava, 2003, pp. 6 - 13
- [16] MESZÁROSOVÁ, K.: Torsion Surfaces and Their Application in Civil Engineering. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 76 – 81 (in Slovak)
- [17] MINÁROVÁ, M.: Temperature, Humidity and Moulds. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 82 – 93 (in Slovak)
- [18] RÜCKSCHLOSSOVÁ, T.: Shift Invariant, Homogeneous and Affine-Stable Aggregation Operators. Abstracts, ISCAM 2003 Conference, Slovak University of Technology, April 11-12, 2003, pp. 30-31
- [19] STRUK, P. – STUPŇANOVÁ, A.: Pessimistic and Optimistic Fuzzy Measures on Finite Sets. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 94-100
- [20] STRUK, P. – VALÁŠKOVÁ, E.: Preservation of Distinguished Fuzzy Measure Classes by Distortion, Proceedings of Uncertainty Modelling '2003, Bratislava, 2003, pp. 48 - 51
- [21] STUPŇANOVÁ, A.: LR-fuzzy Numbers and the Law of Large Numbers, Proceedings of Uncertainty Modelling '2003, Bratislava, 2003, pp. 24 - 33
- [22] SZÖKEOVÁ, D.: Cubic Interpolation Curves. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 101 – 106 (in Slovak)

- [23] VAJSÁBLOVÁ, M., Projection on Special Surfaces. Proceedings of the MAGIA 2003 Conference, Kočovce, June 6 – 8, 2003, pp. 107-112 (in Slovak)
- [24] VICENÍK, P.: Generalizations of Some Constructions of Triangular Norms. Abstracts, ISCAM 2003 Conference, Slovak University of Technology, April 11 – 12, 2003, pp. 36 – 37

Contributions to Proceedings Abroad (in English):

- [1] BRANKOVIC, L. - ŠIRÁŇ, J.: 2-Compromise Usability in 1-Dimensional Statistical Databases. Proceedings of the 8th Annual International Computing and Combinatorics Conference (COCOON 2002), Lecture Notes in Computing Science, 2002, pp. 53 - 67
- [2] CALVO, T. - MESIAR, R.: Fusion with Quantitative Weights. Proceedings of the EUSFLAT 2003 Conference, Zittau, Germany, September 10 – 12, 2003, pp. 312 – 317
- [3] CALVO, T. – MESIAROVÁ, A. – VALÁŠKOVÁ, L.: Composition of Aggregation Operators – One More New Construction Method. Proceedings of the AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003, pp. 51 – 53
- [4] FROLKOVIČ, P. - MIKULA, K.: Flux-Based Level Set Method: Finite Volume Method for Evolving Interfaces. Preprint Series IWR/SFB 359, Interdisciplinary Center for Scientific Computing, University of Heidelberg, Germany, 2003
- [5] IPOLYIOVÁ, M.: The Minimal Polynomial of $2 \cos(\pi/p)$ and Regular Maps of a Large Planar Width. Abstracts, Czech and Slovak Conference on Graph Theory and Combinatorics 2003, Javorná, Czech Republic, June 2 – 6, 2003, p. 8
- [6] KALICKÁ, J. – NÁNÁSIOVÁ, O. – TROKANOVÁ, K. – VAJSÁBLOVÁ, M.: eLearning of Mathematics and Geometry at Slovak Technical University. Conference Papers, Vol. II, International DEL 2003 Conference, Prague, September 2003, pp. 39-43
- [7] KALINA, M. – NÁNÁSIOVÁ, O.: Construction of Joint Distributions on MV-Algebras via Conditional Distributions. Internet Proceedings of the 2d Workshop Mathematical Structures for Nonstandard Logics, Prague, December 2003
- [8] KALINA, M.: Coordinate-Wise Aggregation of Nearness Relations. Proceedings of the AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003, pp. 89-95.
- [9] KALINA, M.: Nearness Relations and Topology. Proceedings of the EUSFLAT 2003 Conference, Zittau, Germany, September 2003, pp. 266-269.
- [10] KLEMENT, E.P. – MESIAR, R. – PAP, E.: Triangular Norms: Some Open Problems. Proceedings of the 24th Linz Seminar on Fuzzy Set Theory, Linz, February 4 – 8, 2003, pp. 135 – 138
- [11] KLEMENT, E. P. - MESIAR, R. – PAP, E.: Copulas: Uniform Approximation, Invariance and Applications in Aggregation. Proceedings of the 24th Linz Seminar on Fuzzy Set Theory, Triangular Norms and Related Operators in Multi-Valued Logics, Linz, Austria, February 4 – 8, 2003
- [12] KNOR, M.: Face 2-Colourable Triangulations of $K_{n,n,n}$ and Bi-Embeddings of Latin Squares. Abstracts, Czech and Slovak Conference on Graph Theory and Combinatorics 2003, Javorná, Czech Republic, June 2 – 6, 2003

- [13] KOLESÁROVÁ, A. – MORDELOVÁ, J. – MUEL, E.: A Review of Binary Kernel Aggregation Operators. Proceedings of the AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003, pp. 97 – 102
- [14] KOMORNÍK, J. – KOMORNÍKOVÁ, M. – MESIAROVÁ, J.: Crisp and Fuzzy Regimes-Switching Models for Exchange Rates of the Slovak Crown to the Euro. Proceedings of the 10th IFSA World Congress - IFSA 2003, Istanbul, Turkey, June 29 – July 2, 2003, pp. 438 – 441
- [15] LÁZARO, J. - RÜCKSCHLOSSOVÁ, T.: Some Types of Invariantness of Aggregation Operators. Proceedings of the AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003, pp. 103 – 105
- [16] LÍŠKOVÁ, L.: Cayley Maps and Their Exponents. Abstracts, Czech and Slovak Conference on Graph Theory and Combinatorics 2003, Javorná, Czech Republic, June 2 – 6, 2003, p. 13
- [17] MESIAR, R. - SAMINGER, S.: Commuting Aggregation Operators. Proceedings of the EUSFLAT 2003 Conference, Zittau, Germany, September 10 – 12, 2003, pp. 308 – 311
- [18] MESIAR, R. - SAMINGER, S.: Decomposable Bi-Capacities. Proceedings of the AGOP 2003 Conference, Alcalá de Henares, Spain, July 14 – 18, 2003, pp. 155 – 158
- [19] MESIAR, R. - VALÁŠKOVÁ, L.: Universal Fuzzy Measures. Proceedings of the 10th IFSA World Congress - IFSA 2003, Istanbul, Turkey, June 29 – July 2, 2003, pp. 139 – 142
- [20] MESIAR, R.: Aggregation Operators 2003. Proceedings of the EUSFLAT 2003 Conference, Zittau, Germany, September 10 – 12, 2003, pp. 277 – 280
- [21] MESIAR, R.: Importance Criteria in Decision Making. Proceedings of the 4th International Workshop on Preferences and Decisions TRENTO 2003, Trento, Italy, September 23 – 26, 2003, pp. 95 – 104
- [22] MESIAR, R.: Fuzzy Measures and Probability. Abstracts, 24th Linz Seminar on Fuzzy Set Theory, Triangular Norms and Related Operators in Multi-Valued Logics, Editors: Klement, E. P., Mesiar, R., Linz, Austria, January 31, 2003
- [23] MIKULA, K. - PREUSSER, T. - RUMPF, M.: Morphological Image Sequence Processing. Preprint Series, University of Duisburg-Essen, 2003
- [24] NÁNÁSIOVÁ, O. – KHRENIKOV, Y. A.: Observables in Quantum Logic. Proceedings of Conference on the Foundation of Probability and Physics – 2, Vaxjo, Sweden, June 2-7, 2003, pp. 417-431
- [25] NÁNÁSIOVÁ, O.: The s-Map and the Marginality of Distribution Functions. Proceedings of Conference on Quantum Theory: Reconsideration of Foundations - 2, Vaxjo, Sweden, June 1- 6, 2003, p. 30
- [26] ŠIAGIOVÁ, J. – WATKINS, M.: Infinite Planar Vertex-Transitive and Cayley Maps with a Given Covalence Vector. Abstracts, 5th International Slovenian Conference on Graph Theory, Bled, Slovenia, June 2003
- [27] VICENÍK, P.: Generalizations of Some Constructions of Triangular Norms. Abstracts, 24th Linz Seminar on Fuzzy Set Theory, Triangular Norms and Related Operators in Multi-Valued Logics, Editors: Klement, E. P., Mesiar, R., Linz, Austria, February 4 – 8, 2003, pp. 45 – 48

IX.2 Books and Textbooks

a) Scientific books and chapters in scientific books

- [1] CALVO, T. - MESIAR, R.: Criteria Importance and Weights in Decision Making. In: Principles of Fuzzy Preference Modelling and Decision Making (B. de Baets and J. Fodor, eds.), Academia Press, Ghent (2003) pp. 95 – 108
- [2] DE BAETS, B. – MESIAR, R.: Discrete Triangular Norms. In: Topological and Algebraic Structures in Fuzzy Sets, Part III. (Rodabaugh and Klement, eds.), Kluwer Academic Publisher, Dordrecht (2003), pp. 389 – 400
- [3] MAS, M. – MESIAR, R. – TORRENS, J.: Associative Operators Based on t-Norms and t-Conorms. In: Bouchon – Meunier, B., Foulloy, L., Yager, R. Eds., Foundations (ISBN 0-444-51379-5), Physica Verlag, Heidelberg (2003), pp. 393 – 404
- [4] MIKULA, K.: Computational Solution, Applications and Analysis of Some Geometrical Nonlinear Diffusion Equations. Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Preprint No. NI03027-CPD, 2003, 89 pp.
- [5] VICENÍK, P.: Additive Generators of Non-Continuous Triangular Norms. In: Topological and Algebraic Structures in Fuzzy Sets, Part III. (Rodabaugh and Klement, eds.), Kluwer Academic Publisher, Dordrecht (2003), pp. 441 – 454

b) Tutorial Textbooks

- [1] KNOR, M.: Mathematics for Managers 1. FM UK Bratislava, 2003 (in English)
- [2] TROKANOVÁ, K. - ŽEMBERY, I.: Mathematics I, II – Tutorial Handbook. SvF STU Bratislava 2003 (in Slovak)

IX.3 Conferences

- [1] Conference on Mathematics, Geometry and Their Applications – MAGIA 2003, Kočovce, June 6 – 8, 2003
- [2] JSMF Seminar on Non - Standard Mathematical Methods
- [3] JSMF Seminar on Topological Graph Theory
- [4] ISCAM 2003 International Conference on Applied Mathematics for Undergraduate and Graduate Students, Bratislava, April 2003
- [5] UWPM 2003, International Workshop of Young Researchers, Kočovce, September 2003