DEPARTMENT OF MATHEMATICS
http://matika.elf.stuba.sk/KMAT

Head of Department
Doc. RNDr. Ľubomír Marko, PhD.   Tel: +421-2-654 27 351
e-mail: lubomir.marko@stuba.sk   Fax: +421-2-654 20 415

I. STAFF

Professors	Prof. RNDr. Igor Bock, PhD., Prof. RNDr. Zdenka Riečanová, PhD.
Associate Professors	Doc. RNDr. Jana Galanová, PhD., Doc. RNDr. Ľubomír Marko, PhD., Doc. RNDr. Vladimír Olejček, PhD., Doc. RNDr. Boris Rudolf, PhD., Doc. RNDr. Ladislav Satko, PhD., Doc. RNDr. Peter Volauf, PhD., Doc. RNDr. Michal Zajac, PhD.
Assistant Professors	RNDr. Igor Brilla, PhD., RNDr. Karla Čipková, PhD., RNDr. Mária Kečkemétyová, PhD., RNDr. Hana Lichardová, PhD., RNDr. Ivica Marínová, PhD., Mgr. Dávid Pancza, PhD., RNDr. Elena Pastuchová, PhD., Mgr. Marcel Polakovič, PhD.
Research Worker	RNDr. Anton Galan
Technical Staff	Gabriela Grúňová (secretary)

II. EQUIPMENT

None

III. TEACHING

III.1 Undergraduate Study (Bc.)

Subject, semester, hours per week for lectures and for seminars or practical exercises, name of the lecturer:

Calculus I	(1st sem., 4-1h)	M. Kečkemétyová B. Rudolf L. Satko
Logic Systems	(1st sem., 4-1h)	J. Galanová V. Olejček M. Polakovič
Calculus II	(2nd sem., 4-1h)	I. Brilla B. Rudolf L. Satko
Linear Algebra I	(1st sem., 2-2h)	M. Zajac
Linear Algebra II	(2nd sem., 2-2h)	M. Zajac
Calculus III	(3rd sem., 3-2h)	Ľ. Marko
Numerical and Statistical Computations	(3rd sem., 3-2h)	P. Volauf

Numerical and Statistical Computations	(4th sem., 3-2h)	V. Olejček
Discrete Mathematics and Logic	(3rd sem., 3-2h)	I. Marínová
Statistical Methods in Informatics	(4th sem., 2-2h)	E. Pastuchová
Ordinary Differential Equations	(3rd sem., 2-2h)	Ľ. Marko
Partial Differential Equations	(4th sem., 2-2h)	I. Bock
Matrix Algorithms	(4th sem., 2-2h)	P. Volauf
Probability and Statistics	(4th sem., 2-2h)	P. Volauf
Linear Algebra and Linear Programming	(6th sem., 2-2h)	M. Zajac
Discrete Mathematics	(6th sem., 3-2h)	J. Galanová

III.2 Graduate Study (Ing.)

Coding Theory	(1st sem., 3-1h)	K. Čipková
Differential Systems and Stability	(1st sem., 2-2h)	I. Bock
Partial Differential Equations	(1st sem., 3-1h)	I. Bock
Mathematical Logic	(1st sem., 3-1h)	J. Galanová
Functional Analysis I	(1st sem., 2-2h)	M. Zajac
Graph Theory	(2nd sem., 3-1h)	J. Galanová
Differential and Difference Systems	(2nd sem., 2-2h)	I. Bock
Stochastic Models	(2nd sem., 2-2h)	V. Olejček
Functional Analysis II	(2nd sem., 2-2h)	M. Zajac

III.3 Undergraduate Study (Bc. Distance Education Method)

Mathematics I	(1st year)	Ľ. Marko
Logic Systems	(1st year)	D. Pancza
Mathematics II	(1st year)	I. Brilla
Mathematics III	(2nd year)	Ľ. Marko
		P. Volauf
Mathematics IV	(2nd year)	V. Olejček

III.4 Graduate Study (Ing. Distance Education Method)

Mathematics	(1st year)	I. Bock

IV. RESEARCH PROJECTS

- The analysis of dynamical mathematical models of elastic and viscoelastic structures acting under contact conditions. G 1/4214/07, I. Bock
- Probabilistic and algebraic uncertainty methods for quantum structures. APVV-0071-06 (A. Dvurečenskij, MU SAV; deputy Z. Riečanová)
- Joint states and conditioning. APVV-0375-06 (R. Mesiar, SvF STU; deputy Z. Riečanová)

V. COOPERATION

V.1 Cooperation in Slovakia

- Mathematical Institute, Slovak Academy of Sciences, Bratislava
- Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava
- Department of Mathematics, Faculty of Civil Engineering, STU, Bratislava
- Department of Mathematics, Faculty of Mechanical Engineering, STU, Bratislava
- Institute of Information Engineering, Automation and Mathematics, Faculty of Chemical and Food Technology, STU, Bratislava
- Faculty of Informatics and Information Technology, STU, Bratislava
- Faculty of Natural Sciences, University of Transport and Communications, Žilina
- Faculty of Natural Sciences, Matej Bel University, Banská Bystrica

V.2 International Cooperation

- Abt. für Mathematik III, Universitaet Ulm, Germany
- Institut für Algebra und Computermathematik TU Vienna, Austria
- Department of Mathematics, FEE CTU, Prague, CzR
- Academy of Sciences of the Czech Republic, Prague, CzR
- Department of Mathematics, Faculty of Natural Sciences of MU, Brno, CzR
- Department of Mathematics, Univ. Louis Pasteur, Strasbourg, France
- Math. Institute, Polish Academy of Sciences, Warsaw, Poland
- Zhejiang University, Hangzhou, China

V.3 Membership in International Organizations and Societies

- ISIMM - International Society for the Interaction of Mechanics and Mathematics (I. Brilla)
- IQSA - International Quantum Structures Association (Z. Riečanová, V. Olejček, G. Jenča)
- Bernoulli Society (Z. Riečanová, V. Olejček)
- AMS - American Mathematical Society (I. Bock, V. Olejček, Z. Riečanová)
- IACM - International Association for Computational Mechanics (I. Brilla, Ľ. Marko)
- Emmy Noether Society (Z.Riečanová, I.Marínová, E.Pastuchová, G. Jenča)
- GAMM - Gesellschaft für Angewandte Mathematik und Mechanik (I. Bock)
- ISSMO - Society for Structural and Multidisciplinary Optimization (I. Bock)
- SIAM - Society for Industrial and Applied Mathematics (V. Olejček, L. Satko)

VI. THESES

VI.1 Masters Theses

Masters theses supervised at the Department of Mathematics. The names of supervisors are in brackets.

VI.2 PhD Theses

[1] Mosná, K.: Archimedean Atomic Lattice Effect Algebras, Algebraic and Topological Aspects (Z. Riečanová)

VII. OTHER ACTIVITIES

- Department is a coeditor of Tatra Mountains Mathematical Publications
- Z. Riečanová: member of editorial board of Tatra Mountains Mathematical Publications
- M. Zajac, I. Bock: members of editorial board of Mathematica Slovaca
- I. Bock, M. Zajac: reviewers for Mathematical Reviews
- I. Bock, M. Zajac: reviewers for Zentralblatt für Mathematik

The department supervises the postgraduate study in:

- Boolean Algebras and Boolean Functions
- Differential Equations in Mathematical Physics
- Functional Analysis
- Quantum Structures
- Ordinary Differential Equations and Variational Calculus

VIII. PUBLICATIONS

VIII.1 Journals

[1] BOCK, I., JARUŠEK, J.: On Hyperbolic Contact Problems. In: Tatra Mountains Mathematical Publications. - ISSN 1210-3195. - Vol. 43 (2009), p. 25-40. (in English)

[2] BOCK, I., JARUŠEK, J.: Solvability of Dynamic Contact Problems for Elastic von Kármán Plates. In: SIAM Journal on Mathematical Analysis. - ISSN 0036-1410. - Vol. 41, No. 1 (2009), p. 37-45. (in English)

[3] KEČKEMÉTYOVÁ, M., BOCK, I.: A Pseudohyperbolic Problem for von a Kármán System. In: Aplimat - Journal of Applied Mathematics. - ISSN 1337-6365. - Vol. 2, No. 2 (2009), p. 101-110. (in English)

[4] MARINOVÁ, I., VALÁŠKOVÁ, Ľ.: Sigma-Additivity of s-Maps. In: Forum Statisticum Slovacum. - ISSN 1336-7420. - Vol. 5, No. 3 (2009), CD-Rom. (in English)

[5] MESIAR, R., NÁNÁSIOVÁ, O., RIEČANOVÁ, Z., PASEKA, J.: Preface: Special issue - Quantum Structures: Theory and Applications. In: Information Sciences. - ISSN 0020-0255. - Vol. 179, Iss. 5 (2009), p. 475-477. (in English)

[6] NÁTHER, P., MARKOŠOVÁ, M., RUDOLF, B.: Hierarchy in the Growing Scale-Free Network with Local Rules. In: Physica A: Statistical Mechanics and its Applications. - ISSN 0378-4371. - Vol. 388 (2009), p. 5036-5044. (in English)

[7] PANCZA, D.: On Asymptotic Behaviour of the Nonlinear Viscoelastic Mindlin-Timoshenko Thin Plate Model. In: Aplimat - Journal of Applied Mathematics. - ISSN 1337-6365. - Vol. 2, No. 2 (2009), p. 133-142. (in English)

[8] PASEKA, J., RIEČANOVÁ, Z.: Isomorphism Theorems on Generalized Effect Algebras Based on Atoms. In: Information Sciences. - ISSN 0020-0255. - Vol. 179, Iss. 5 (2009), p. 521-528. (in English)

[9] PASTUCHOVÁ, E., VÁCLAVÍKOVÁ, Š.: Application of Statistical Methods in Hydrology. In: Forum Statisticum Slovacum. - ISSN 1336-7420. - Vol. 5, No. 3 (2009), CD-Rom. (in Slovak)

[10] RIEČANOVÁ, Z.: Pseudocomplemented Lattice Effect Algebras and Existence of States. In: Information Sciences. - ISSN 0020-0255. - Vol. 179, Iss. 5 (2009), p. 529-534. (in English)

[11] VOLAUF, P.: On Positive Dependence of Random Variables. In: Forum Statisticum Slovacum. - ISSN 1336-7420. - Vol. 5, No. 3 (2009), CD-Rom. (in English)

VIII.2 Conference Proceedings

[1] BOCK, I.: A Vibrating Elastic Plate with an Inner Obstacle. In: CMAS 2009. Computational Modelling and Advanced Simulations : International Conference. Bratislava, Slovak Republic, 30.6.- 3.7.2009. - Bratislava : STU, 2009. - ISBN 978-80-227-3067-9. - CD-Rom. (in English)

[2] BOCK, I., KEČKEMÉTYOVÁ, M.: An Optimal Control Problem for a Viscoelastic Cantilever Beam with a Dynamic Boundary Contact. In: 7th Workshop on Functional Analysis and its Applications in Mathematical Physics and Optimal Control. Nemecká, Slovak Republic, 14.-19.9.2009. - Bratislava : STU, 2009. - p. 9-13. (in English)

[3] BOCK, I., JARUŠEK, J.: Dynamic Contact Problem for a Viscoelastic Full von Kármán System. In: 7th Workshop on Functional Analysis and its Applications in Mathematical Physics and Optimal Control : Proceedings. Nemecká, Slovak Republic, 14.-19.9.2009. - Bratislava : STU, 2009. - p. 3-8. (in English)

[4] BOCK, I., LOVÍŠEK, J.: On the Optimal Design Problem for a Viscoelastic Plate with a Dynamic Contact on Its Boundary. In: New Trends in Statics and Dynamics of Buildings : 7th International Conference. Bratislava, Slovak Republic, 22.-23.10.2009. - Bratislava : STU, 2009. - ISBN 978-80-227-3170-6. - p. 237-240. (in English)

[5] BRAČIČ, J., ZAJAC, M.: Hyperreflexivity Constants of 2-by-2 Matrices and Some Non-Hyperreflexive Reflexive Spaces of Operators. In: 7th Workshop on Functional Analysis and its Applications in Mathematical Physics and Optimal Control. Nemecká, Slovak Republic, 14.-19.9.2009. - Bratislava : STU, 2009. - p. 14-18. (in English)

[6] CHVOJKA, P., SATKO, L.: Shamir Secret Sharing Threshold Scheme. In: ŠVOČ 2009. Proceedings of Winning Works. Bratislava, Slovak Republic, 29.4.2009. - Bratislava : FEI STU, 2009. - ISBN 978-80-227-3094-5. - CD-Rom. (in Slovak)

[7] HUBA, M., MARKO, Ľ., BAHNÍK, P., ORAVEC, I.: Numerical Issues in Designing PI Controller for IPDT Plant. In: Process Control 2009 : 17th International Conference. Štrbské Pleso, Slovak Republic, 9.-12.6.2009. - Bratislava : STU, 2009. - ISBN 978-80-227-3081-5. - p. 57-64. (in English)

[8] MARKO, Ľ., SOVIŠOVÁ, D., ŽÁKOVÁ, K., HUBA, M.: Reviving E-learning Course on University Pre-entry Math. In: Virtual University 2009 : 10th International Conference. Bratislava, Slovak Republic, 10.-11.12.2009. - Bratislava : STU, 2009. - ISBN 978-80-89316-11-3. - CD-Rom. (in English)

[9] PANCZA, D.: The Mindlin-Timoshenko Thin Plate Model with a Non-Uniform Thickness. In: 7th Workshop on Functional Analysis and its Applications in Mathematical Physics and Optimal Control. Nemecká, Slovak Republic, 14.-19.9.2009. - Bratislava : STU, 2009. - p. 33-35. (in English)

[10] RUDOLF, B.: An Existence Result for a Second Order Boundary Value Problem with p-Laplacian. In: 7th Workshop on Functional Analysis and its Applications in Mathematical Physics and Optimal Control. Nemecká, Slovak Republic, 14.-19.9.2009. - Bratislava : STU, 2009. - p. 36-39. (in English)

VIII.3 Parts of Books

[1] BRILLA, I.: Numerical Solution of Boundary Inverse Problems for Orthotropic Solids. In: Numerical Modeling of Coupled Phenomena in Science and Engineering : Practical Use and Examples. - Boca Raton : CRC Press, 2009. - ISBN 9780415476287. - p. 11-20. (in English)

[2] POLAKOVIČ, M.: What is Quantum Cryptography?. In: Begabtenförderung im MINT-Bereich. Mathematik, Informatik, Naturwissenschaften, Technik. Band 20. - Ulm : Aegis, 2009. - ISBN 978-3-87005-075-7. - p. 105-110. (in English)

VIII.4 Textbook

[1] ČIPKOVÁ, K., SATKO, L.: Introduction to Coding Theory. - Bratislava : STU in Bratislava, 2009. - 204 p. - ISBN 978-80-227-3016-7. (in Slovak)