DEPARTMENT OF MATHEMATICS
http://www.elf.stuba.sk/departments/kmat/kmat.html

Head of Department
Doc. RNDr. Ladislav Satko, PhD.   Tel: ++421-2-654 27 351
e-mail: satko@kmat.elf.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. Mgr. Gejza Jenča, PhD., Doc. RNDr. Ľubomír Marko, PhD., Doc. RNDr. Vladimír Olejček, PhD., Doc. RNDr. Ladislav Satko, PhD., Doc. RNDr. Peter Volauf, PhD., Doc. RNDr. Michal Zajac, PhD., Doc. RNDr. Igor Zuzčák, PhD.
Assistant Professors	RNDr. Igor Brilla, PhD., RNDr. Karla Čipková, PhD., Ing. Silvia Horváthová, RNDr. Peter Kaprálik, 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., RNDr. Boris Rudolf, PhD., Mgr. Marta Šimovcová
Research Worker	RNDr. Anton Galan
Technical Staff	Gabriela Grúňová (secretary)
PhD. Student	Mgr. Katarína Mosná

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 lecturer

Subject	Semester	Lecturer
Calculus I	(1st sem., 4-1h)	M. Kečkemétyová Ľ. Marko Z. Riečanová L. Satko M. Zajac
Logic Systems	(1st sem., 4-1h)	J. Galanová P. Kaprálik M. Polakovič L. Satko
Linear algebra	(1st sem., 2-2h)	M. Zajac
Calculus II	(2nd sem., 4-1h)	Z. Riečanová B. Rudolf L. Satko
Linear algebra II	(2nd sem., 2-2h)	M. Zajac

Calculus II	(2nd sem., 3-3h)	I. Bock
Numerical Methods of Linear Algebra	(2nd sem., 3-2h)	P. Volauf
Calculus III	(3rd sem., 3-2h)	Ľ. Marko
Numerical and Statistical Computations	(3rd sem. 3-2h)	P. Volauf
Discrete Mathematics and Logic	(3rd sem. 3-2h)	G. Jenča
Numerical and Statistical Computations	(4th sem. 3-2h)	P. Volauf
Statistical Methods in Informatics	(4th sem. 2-2h)	E. Pastuchová
Analysis of Linear Systems	(5th sem. 2-2h)	M. Zajac

III.2 Graduate Study (Ing.)

Coding Theory	(1st sem., 3-1h)	K. Čipková
Differential and Difference Equations	(1st sem., 2-2h)	B. Rudolf
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
Probabilistic Dynamical Models	(1st sem., 3-1h)	V. Olejček
Probability and Statistics	(1st sem., 3-1h)	I. Marinová
Theory of Fuzzy Systems	(1st sem., 3-1h)	P. Volauf
Graph Theory	(2nd sem., 3-1h)	J. Galanová
Differential and Difference Systems	(2nd sem., 2-2h)	I. Bock

III.3 Undergraduate and Graduate Study for Foreign Students (in English Language)

Calculus I	(1st sem., 4-2h)	Ľ. Marko
Calculus II	(2nd sem., 4-2h)	I. Brilla
Switching Circuits and Logic Design	(2nd sem., 3-1h)	K. Čipková
Calculus III	(3rd sem., 3-2h)	Ľ. Marko
Probability and Statistics	(1st sem., 3-2h)	P. Volauf

IV. RESEARCH PROJECTS

- Algebraic and Topological Properties of Quantum Structures and Quantum Probability Theory. G 1/0266/03, Z. Riečanová
- The Analysis and Creation of Mathematical Models of Elastic and Viscoelastic Structures Acting under Contact Conditions. G 1/1135/04, I. Bock
- Application of Algebraic Methods of Modelling Uncertainty and Information Processing. APVT-51-03202, S. Pulmannová (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
- Faculty of Natural Sciences, Matej Bel University, Banská Bystrica
- Department of Mathematics, Faculty of Civil Engineering, STU, Bratislava
- Department of Mathematics, Faculty of Chemical Engineering, STU, Bratislava
- Faculty of Informatics and Information Technology, STU, Bratislava
- Military Academy, Liptovský Mikuláš
- Faculty of Natural Sciences, University of Transport and Communications, Žilina

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

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.2 Doctoral Theses

[1] K. Čipková: Graphs induced by monounary algebras (D. Studenovská)
[2] D. Pancza: The Mindlin-Timoshenko viscoelastic thin plate model (I. Bock)

VII. OTHER ACTIVITIES

- Organizing of the conference in applied mathematics ISCAM'2005, April 15-16, 2005, Bratislava
- 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:

- Applied Informatics

- 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.: On a von Kármán System for Anisotropic Viscoelastic Plates. In: PAMM. Proceedings of Applied Mathematics and Mechanics. - Vol.5, No.1 (2005) - pp. 227-228. (in English)

[2] BOCK, I., LOVÍŠEK, J.: On a Contact Problem for a Viscoelastic Von Kármán Plate and Its Semidiscretization. In: Applications of Matehematics. - Vol.50, No.3 (2005) - pp. 203-217. (in English)

[3] BRILLA, I.: Numerical Analysis of 3D Boundary Inverse Conductivity Problems for Anisotropic Media. In: WSEAS Transactions on Communications. - Vol.4, No.6 (2005) - pp. 306-311. (in English)

[4] ČIPKOVÁ, K.: On a *G*-Power of Monounary Algebras. In: Journal of Electrical Engineering. - Vol.56, No.12/s (2005) - pp. 50-52. (in English)

[5] ČIPKOVÁ, K.: On a Quasiorder on the Class on Monounary Algebras. In: Soft Computing. (2005) - http://www.springerlink.com. (in English)

[6] ČIPKOVÁ, K., JAKUBÍKOVÁ-STUDENOVSKÁ, D.: Graph Homomorphisms of Partial Monounary Algebras. In: Mathematica Slovaca. - Vol.55, No.2 (2005) - p. 155-167. (in English)

[7] KUBÁČEK, Z., RUDOLF, B.: On the Number of Periodic Solutions of a Generalized Pendulum Equation. In: Archivum Mathematicum. - Vol.41, No.2 (2005) - p. 197-208. (in English)

[8] MARKO, Ľ.: Buckling-Bending Problem for Circular Plate. In: PAMM Proceedings of Applied Mathematics and Mechanics. - Vol.5, No.1 (2005) - pp. 247-248. (in English)

[9] POLAKOVIČ, M.: Evolution of Orbits and Quantum Correlation Functions by Quadratic Hamiltonians. In: International Journal of Theoretical Physics. - Vol.44, No.4 (2005) - pp. 385-397. (in English)

[10] RIEČANOVÁ, Z.: Basic Decomposition of Elements and Jauch-Piron Effect Algebras. In: Fuzzy Sets and Systems. - Vol.155 (2005) - pp. 138-149. (in English)

[11] RIEČANOVÁ, Z.: Embeddings of Generalized Effect Algebras into Complete Effect Algebras. In: Soft Computing. - Vol.9 (2005) – http://www.springerlink.com. (in English)

[12] RIEČANOVÁ, Z., MARINOVÁ, I.: Genralized Homogeneous, Prelattice and MV-Effect Algebras. In: Kybernetika. - Vol.41, No.2 (2005) - pp. 129-142. (in English)

[13] VOLAUF, P.: On Association of Random Variables and Copulas. In: Forum Statisticum Slovacum. - No.3 (2005) - pp. 91-98. (in Slovak)

VIII.2 Conferences

[1] BOCK, I.: On a Modelling of Some Biomechanical Phenomena by a Bending Analysis of Viscoelastic von Kármán Plates in Contact with an Inner Obstacle. In: 17th IMACS World Congress: Scientidic Computation, Applied Mathematics and Simulation : Paris, France, 11.-15.7.2005. (in English)

[2] BOCK, I., JARUŠEK, J.: On One Dynamic Contact Problem for a Viscoelastic von Kármán Plate with a Free Boundary. In: 5th Workshop on Functional Analysis and Its Applications in Mathematical Physics and Optimal Control : Nemecká, Slovak Republic, 12.-17.9.2005. pp. 8-14. (in English)

[3] BOCK, I., KEČKEMÉTYOVÁ, M.: On the Third-Order Evolution Equation. In: 5th Workshop on Functional Analysis and Its Applications in Mathematical Physics and Optimal Control : Nemecká, Slovak Republic, 12.-17.9.2005. pp. 15-20. (in English)

[4] BOCK, I., LOVÍŠEK, J.: On a Geometrically Nonlinear Viscoelastic Shallow Shell. In: Seminar of Applied Mathematics : Prague, Czech Republic, 26.-27.4.2005. pp. 16-26. (in English)

[5] GALANOVÁ, J., PASTUCHOVÁ, E.: Application of Algebraic and Cyclic Curves for the Formation Surfaces of Rotary Symmetric Reflectors. In: 4th International Conference APLIMAT 2005 : Bratislava, Slovak Republic, 1.-4.2.2005. pp. 179-183. (in Slovak)

[6] GAŠPAROVSKÝ, D., KRASŇAN, F., PASTUCHOVÁ, E.: Numerical Calculation of the V (λ) Curves with Precising Procedures. In: 10th European Lighting Conference : Berlin, Germany, 19.-21.9.2005. pp. 333-336. (in English)

[7] KEČKEMÉTYOVÁ, M.: Generic Properties of the Set of Solutions to BVPs. In: 4th International Conference APLIMAT 2005 : Bratislava, Slovak Republic, 1.-4.2.2006. pp. 67-70. (in English)

[8] MARKO, Ľ.: Bifurkation Problems in Hilbert Space. In: 5th Workshop on Functional Analysis and Its Applications in Mathematical Physics and Optimal Control : Nemecká, Slovak Republic, 12.-17.9.2005. pp. 50-54. (in English)

[9] MARKO, Ľ., SOVIŠOVÁ, D.: Evaluation of Courses "Preparation for University Study". In: 6th Conference "eLearning 2005" : Hradec Králové, Czech Republic, 8.-11.11.2005. pp. 306-307. (in Slovak)

[10] PANCZA, D.: The Viscoelastic Mindin-Timoschenko Thin Plate Model: Asymptotic Behaviour for t $\rightarrow \infty$. In: 5th Workshop on Functional Analysis and Its Applications in Mathematical Physics and Optimal Control : Nemecká, Slovak Republic, 12.-17.9.2005. pp. 55-58. (in English)

[11] RUDOLF, B.: An Existence Result for a Periodic Boundary Value Problem. In: 5th Workshop on Functional Analysis and Its Applications in Mathematical Physics and Optimal Control : Nemecká, Slovak Republic, 12.-17.9.2005. pp. 62-65. (in English)

[12] VOLAUF, P.: Nonstandard Piecewise Linear Least Squares Fitting. In: 4th International Conference "Aplimat 2005" : Bratislava, Slovak Republic, 1.-4.2.2005. pp. 545-548. (in English)

[13] ZAJAC, M.: On the Hyperreflexivity of the Space of Intertwining Operators. In: 5th Workshop on Functional Analysis and Its Applications in Mathematical Physics and Optimal Control : Nemecká, Slovak Republic, 12.-17.9.2005. pp. 80-83. (in English)

VIII.3 Textbooks

[1] SABOLOVÁ, M., SATKO, L.: Calculus 1. - Bratislava: FIIT STU, 2005. - 61 pp. (in Slovak)

[2] VOLAUF, P.: Numerical and Statistical Computations in MATLAB. - Bratislava: FEI STU, 2005. - 186 pp. (in Slovak)