

International Symposium  
"ACTUAL PROBLEMS OF MATHEMATICS AND INFORMATICS"  
dedicated to the 90th Birthday of Professor Ion Valutse  
PROGRAM

27th November  
14:00. Opening Session

Viorel BOSTAN, Rector of the Technical University of Moldova.  
Mitrofan CIOBANU, Academician of Academy of Sciences of Moldova.

Plenary Session

Chairman: Mitrofan CHOBAN

14:20 - 15:05 - Viorel BOSTAN, Ion BOSTAN, Maxim VACULENCO. Mathematical modeling of teeth contact in precessional transmission.

15:05 - 15:50 - Vasile BERINDE. A simple ODE mathematical model to assess the effectiveness of facemask wearing in COVID-19 pandemic.

15:50 - 16:35 - Joan C. ARTES, Jaume LLIBRE, Dana SCHLOMIUK, Nicolae VULPE. Abel quadratic differential systems of second kind.

16:35 - 17:15 - Costica MOROȘANU. Numerical simulations of phase-field transitions in 1D case, via a nonlinear and nonlocal reaction-diffusion equation of second-order.

Break

Section 1. Mathematics

Chairman: Dumitru COZMA

17:25 - 17:45 - David CHEBAN. Perron-Frobenius Dynamics for Markov Chains.

17:45 - 18:05 - Dumitru COZMA, Angela MATEI. On integrability of homogeneous fractional quadratic differential equation.

18:05 - 18:20 - Vasile NEAGU. On boundedness of the operator with Cauchy kernel on the real axis.

18:20 - 18:35 - Vasile I. URSU. About algebraic characterization of quasi-varieties of loops.

18:35 - 18:50 - Leonid A. URSU. General form of autotopies of 3-IP-loop.

18:50 - 19:05 - Andrei PERJAN, Galina RUSU. Two parameter singular perturbation problems for sine-Gordon type equations.

19:05 - 19:20 - Mihai N. POPA, Victor V. PRICOP. Four-dimensional reductive Lie algebra for the ternary differential system with quadratic nonlinearities and its perspectives in the study of this system.

19:20 - 19:35 - F. L. DAMIAN, P. V. MACAROV. On star regular equidistant polyhedrons in Lobachevsky space.

19:35 - 19:50 - Mitrofan M. CHOBAN, Ekaterina MIHAYLOVA. Family of subspaces with bases of countable order.

## Section 2. Computer science and its theoretical mathematical bases

Chairman: Alexei LEAHU

17:25 - 17:40 - Alexei LEAHU, Veronica ANDRIEVSCHI-BAGRIN, Dumitru CIORBA, Ion FIODOROV. Min(max-psd) and max(min-psd) distributions as a lifetime distributions in network's reliability.

17:40 - 17:55 - Constantin CIUBOTARU. Generarea și utilizarea imaginilor în studierea automatelor finite.

17:55 - 18:10 - Ion BOLUN, Dumitru CIORBA, Aureliu ZGUREANU, Rodica BULAI, Rostislav CĂLIN, Cristina BODOGA. State of infosecurity in the Republic of Moldova.

18:10 - 18:25 - SPÎNU Lavinia. Artificial Intelligence-The Lack of Privacy.

18:25 - 18:40 - Andrei CORLAT. Reliability analysis of some complex systems with time redundancy.

18:40 - 18:55 - Liubomir CHIRIAC Metode de construcție a quasigrupurilor mediale și paramediale I.

18:55 - 19:10 - Tatiana PAȘA. Solving the non-linear transportation problem on network.

19:10 - 19:25 - Vitalie ȚICĂU, Stela ȚICĂU. Aplicarea metodelor numerice la rezolvarea ecuațiilor polinomiale.

19:25 - 19:40 - Olga CERBU, Anatolie CERBU, Ghenadie DONCENCO (masterand), Veaceslav IURCO (elev). Abordări metodice în utilizarea algoritmilor iterativi în construirea unei triangulații Delaunay și implementarea în limbajul java.

## Section 3. Didactics and Education

Chairman: Andrei CORLAT

17:25 - 17:40 - Andrei CORLAT, Ion JARDAN. Unele aspecte ale integrării funcțiilor raționale

17:40 - 17:55 - Andrei CORLAT, Ion JARDAN. Aplicarea monotoniei funcțiilor la rezolvarea ecuațiilor

17:55 - 18:10 - Viorica SUDACEVSCHI, Victor ABABII, Silvia MUNTEANU, Radu MELNIC, Viorel CĂRBUNE. Sistem bazat pe tehnologii labview pentru predarea la distanță a disciplinelor ingineresti.

18:10 - 18:25 - Valeriu GUȚU. Geometric aspects in teaching the course "Differential Equations".

18:25 - 18:40 - Violeta BOGDANOVA. Metodologia implementarii conceptului "eliminarea de-calajului digital" în procesul studierii disciplinei "Securitatea Informațională".

18:40 - 18:55 - Marina BOSTAN. Aspecte didactice în pregătirea experimentului pedagogic privind implementarea TIC în predarea cursului universitar "Teoria Grafurilor".

18:55 - 19:10 - Teodora VASCAN. Aspecte didactice privind realizarea legăturilor interdisciplinare Informatică-Matematică la treapta gimnazială.

19:10 - 19:25 - Ana GASNAȘ, Angela GLOBA. Experiența învățării online în condițiile pandemiei COVID-19.

19:25 - 19:40 - Leonid DOHOTARU, Victor ORLOV Despre unele aplicații ale numerelor complexe în geometrie.

19:40 - 19:55 - Maria PAVEL, Dorin PAVEL. Recomandări și soluții tehnice în învățământul online.

28th November

Plenary Session

Chairman: Mitrofan CHOBAN

09.00 - 09:25 - Alexander V. ARHANGEL'SKII. A Note on some Open Problems in Topological Algebra.

09.25 - 09:50 - Inga TITCHIEV, Constantin GAINDRIC. Perspective research at the "Vladimir Andrunachievici" institute of mathematics and computer science.

09.50 - 10:15 - Liubomir CHIRIAC. Evolutions and trends in the study of real sciences in the Republic of Moldova.

10.15 - 10.40 - Marcel TELEUCĂ, Larisa SALI. Training the skills to use notions of physics to solve geometry problems.

10:40 - 11:10 - Ion I. VALUȚĂ. On the waves of the past.

11:10-11:30 Break

### Section 1. Mathematics

Chairman: Florin DAMIAN

11.30 - 11.45 - Ion JARDAN. Some particular cases for inverse operations in the class of preradicals in modules.

11.45 - 12.00 - Vadim REPEȘCO. A qualitative study of the cuartic system with maximal multiplicity of the line at the infinity.

12.00 - 12.15 - G. HOROSH, N. MALYUTINA, A. SCERBACOVA, V. SHERBACOV. Units in generalized derivatives of quasigroups.

12.15 - 12.30 - Mariana-Geanina ZAHARIA. Applications of some special number sequences and quaternion elements using Fibonacci and Lucas elements.

12.30 - 12.45 - Mitrofan M. CHOBAN, Ion I. VALUȚĂ. On the semigroup of endomorphisms of a topological universal algebra.

12.45 - 13.00 - Dumitru BOTNARU, The group of c-reflective subcategories.

13.00 - 13.15 - Alina ȚURCANU. The left and the right products, and the relative torsion theories.

13.15 - 13.30 - Iurie BALTAG, On some determination solutions of the stationary navier-stokes equation.

13.30 - 13.45 - Ion LEAH, Hiperboloidul cu o panza ca rețea algebrică.

13.45 -14.00 - Olga CERBU, Reflective functors and factorization structures

### Section 2. Computer science and its theoretical mathematical bases

Chairman: Victor ABABII

11.30 - 11.45 - Abhishek PANDEY, V. RAMESH. A Study on Deep Learning Algorithms and Architectures.

11.45 - 12.00 - Dorin AFANAS, Andrei BRAICOV. STEAM education in search missions.

12.00 - 12.15 - Elena CEBOTARU. Computer Algebra Methods for linearization of the normal form Birghoff.

12.15 - 12.30 - Lidia POPOV, Vitalie ȚICĂU. Learning microsoft excel software using video sequences.

12.30 - 12.45 - A. DANILOV, L. CHIRIAC. Studiarea sistemului criptografic simetric ElGamal.

12.45 - 13.00 - Viorel BOSTAN, Ion BOSTAN, Valeriu DULGHERU, Oleg CIOBANU. Some aspects regarding torque study and elaboration of the blades orientation mechanism for mycrohydropower pland.

13.00 - 13.15 - Marin GUȚU. Importanța matematicii aplicate în soluționarea provocărilor/problemelor din lumea reală.

### Section 3. Didactics and Education

Chairman: Leonid DOHOTARU

11.30 -11.45 - Laurențiu CALMUȚCHI. Dividing the figures into equivalent parts.

11.45 - 12.00 - Marina DARIENKO. Certain features of teaching the basis of probability theory in secondary vocational education.

12.00 - 12.15 - Iurie BALTAG. Cu privire la poziția reciprocă a unei drepte și a unei suprafețe de ordinul doi și a determinării distanței minime dintre ele.

12.15 - 12.30 - Serghei MAFTEA. Aspecte privind metoda inducției matematice.

12.30 - 12.45 - Natalia LUPAȘCO, Liubomir CHIRIAC, Natalia JOSU, Lilia MIHALACHE. Aspecte didactice privind studierea roboticii și mecatronicii în sistemul preuniversitar.

12:45 - Closing Ceremony