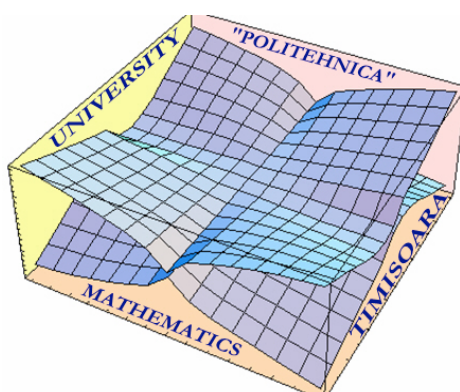


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RESEARCHES IN MATHEMATICS AND APPLIED MATHEMATICS

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RESEARCH FIELDS

- *Functional equations. Functional equations inequalities.*
- *Frame and Wavelet Analysis. Hyers-Ulam stability.*
- *Analysis on manifolds pseudo-Riemannian.*
- *Stochastic analysis, stochastic differential equations, stochastic modeling, stochastic finances.*
- *Qualitative Theory of Functional Equation.*
- *Operator Theory.*
- *Dynamical systems and applications.*
- *Fluid mechanics.*
- *Calculus of variations and optimal control. Program Analysis and Verification.*
- *Ordinary differential equations.*
- *Theory of a -categories.*
- *Functional analysis.*
- *Numerical methods, asymptotic methods.*
- *Numerical results with FreeFem++ (modelling and numerical simulations).*
- *Differential equations, numerical solutions, stability.*
- *Optimal control, collocation-type methods.*
- *Spectral methods in Hydrodynamic stability.*
- *Ricci flow. Spaces of Riemannian Metrics.*
- *Geometry-Mechanical geometry*
- *Statistics – generalized linear models*

RESEARCH GRANTS

1. PD UEFSCDI – Grant, No. 31/ 5.10.2011- Analytic and numerical methods for the linear and nonlinear stability of swirling flows ("Metode analitice si numerice de stabilitate liniara si neliniara a curgerilor cu vartej") (I.F. Dragomirescu).

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BOOKS

1. T. Binzar, C. Lazureanu, *Probleme de calcul integral si ecuatii diferentiale*, Ed. Politehnica Timisoara, 208 pp. ISBN: 978-606-554-261-7.
2. C. Lazureanu, *Matematici pentru studentii arhitecti-Probleme rezolvate*, Ed. Politehnica Timisoara, 64 pp. ISBN: 978-606-554-358-4.
3. A. Kovacs, L. Kovacs, G. Tigan, C. Milici, *Matematici asistate de calculator, Mathematica, Matlab, MathCad*, Editura Politehnica Timisoara, 585 pp ISBN 978-606-554-288-4.
4. A. Kovacs, O. Bundau, C. Caplescu, *Matematici speciale. Culegere de probleme*, Editura Politehnica Timisoara 376 pp. ISBN 978-606-554-397-3.
5. Gh. Babescu, O. Bundau, A. Juratoni, *Analiza Matematica*. Ed. Mirton, 530 pp. ISBN 978-973-52-1002-1
6. A. Juratoni, O. Bundau, Olivia, *Exercitii si probleme de algebra liniara, geometrie analitica si diferentiale*, Ed. Politehnica, 186 pp. ISBN 978-606-554-405-5.

PERSPECTIVES

- Study the fixed point theorems for forward-backward stochastic differential equations and applications to finance modelling.
- Study the Stochastic Delay Differential Equations with Markovian Switching and their applications to automotive engineering.
- Stability in so_4 and so_3 . Numerical stability in mechanics geometry.
- New results on frames, fusion frames and Hyers-Ulam stability.
- Probabilistic applications to control statistic of quality and forecasting.
- Global dynamical systems on topological manifolds.

- Numerical Methods and Engineering Applications with Mathematica and Matlab.
- Qualitative studies of some dynamic systems using semigroup of operators.
- We intend to use the fixed points methods to obtain new results of stability for various types of functional equations
- Bifurcation theory.
- Deformation Geometry of material structure.
- Participate at the international conferences and publish books.

RESEARCH TEAM

- Prof.Dr. Octavian LIPOVAN
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- Prof.Dr. Pașc GĂVRUȚĂ
- Prof.Dr. Emilia PETRIȘOR
- Assoc.Prof.Dr. Ioan GOLEȚ
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- Assoc.Prof.Dr. Doru PĂUNESCU
- Assoc.Prof.Dr. Constantin BOTA
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- Lecturer Dr. Nicolae CRIVĂȚ
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