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## **Web Site**

<http://www.mi.rtu.lv/ra08/>

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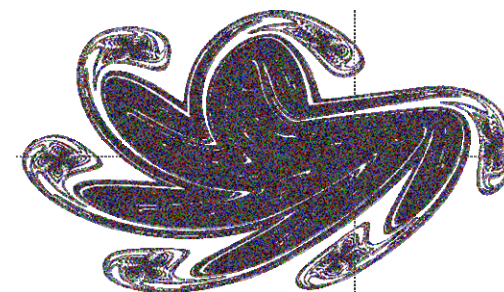
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Latvian Academy of Science  
Latvian Council of Science  
Latvian National Committee for Mechanics

## **International Symposium RA08**

# **Rare Attractors and Rare Phenomena in Nonlinear Dynamics**

## **Program**



**Rīga – Jūrmala, Latvia  
September 8 – 12, 2008**

## Monday, September 8

**13.00 – 14.00 Registration**

**14.00 – 15.30 Symposium Opening & Session 1**

(Chair Prof. J. Viba)

- **I. Blekhman, L. Kuznetsova** (Russia)

Rare Events – Rare Attractors; Formalization and Examples

- **M.V. Zakrzhevsky** (Latvia)

Rare Attractors and Method of Complete Bifurcation Groups (MCBG). New Basic Concepts of Nonlinear Dynamics?

**15.30 – 16.00 Coffee break**

**16.00 – 21.00 Visit to Old City Riga and Open-Air Museum with Informal Dinner**

## Tuesday, September 9

**9.00 – 10.30 Session 2** (Chair Prof. I. Blekhman)

- **A. Naess, E. Mo** (Norway)

Chaotic Dynamics of Meshing Gears

- **K. Ragulskis, L. Ragulskis** (Lithuania)

Dynamical Directivity and Chaos in Some Systems with Supplementary Degrees of Freedom

**10.30 – 11.00 Coffee break**

**11.00 – 13.00 Session 3** (Chair Prof. A. Bubulis)

- **Yu. Shunin, V. Gopeyenko** (Latvia)

Chaotic Phenomena in Nanoelectronics

- **V.V. Beletsky, A.V. Rodnikov** (Russia)

Libration Points Similar to Eulerian in the Model

Problem of the Binary-Asteroids Dynamics

- **I.T. Schukin, M.V. Zakrzhevsky,**

**Yu.M. Ivanov, V.V. Kugelevich, V.E. Malgin,**

**V.Yu. Frolov** (Latvia)

Realization of Direct Methods and Algorithms for Global Analysis of Nonlinear Dynamical Systems

**13.00 – 14.00 Lunch**

**14.00 – 15.30 Session 4** (Chair

Prof. O. Kononova)

- **N. Mestanzade, L. Yilmaz** (Turkey)

Nonlinear Dynamics of Pipeline Vibration

- **J. Awrejcewicz, D. Grzelczyk, Yu. Pyryev**

(Poland)

A Novel Dry Friction Modeling and Its Impact on Differential Equations Computation and

Lyapunov Exponents Estimation

**Posters session 1**

**16.00 – 21.00 Visit to Jaunpils Medieval Castle with Informal Dinner**

## Wednesday, September 10

**9.00 – 10.30 Session 5** (Chair Prof. L. Yilmaz)

- **J. Viba, L. Shtals, A. Vilkajs, E. Kovals**

(Latvia)

Nonlinear Optimal Synthesis of the Vibrator with Flow Excitation

- **A.V. Rodnikov** (Russia)

On Rotations of a Dumbbell Equipped with ‘the Leier Constraint’

**10.30 – 11.00 Coffee break**

**11.00 – 13.00 Session 6**

- **A.S. Gorobtsov, E.N. Ryzhov, A.S. Churzina**

(Russia)

Principals of Multilinked Nonlinear Stabilization and Lame–Manifolds in Dynamic Systems

- **O. Kononova, A. Pupurs, A. Krasnikovs**

(Latvia)

Fiber Concrete Beam Failure Observed As Rare Phenomena

- **V.Yu. Yevstignejev, M.V. Zakrzhevsky,**

**I.T. Schukin, R.S. Smirnova, E.P. Shilvan**

(Latvia)

The Birth and Death of Chaotic Attractors

**13.00 – 14.00 Lunch**

**14.00 – 17.00 Master – class 1: RA and MCBG**

**Posters session 2**

**18.00 – 21.00 Visit to Riga Dome Cathedral**

## Thursday, September 11

**9.00 – 10.30 Session 7** (Chair

Prof. M.V. Zakrzhevsky)

- **M.F. Dimentberg** (USA), **A. Hera** (USA) and

**A. Naess** (Norway)

Marginal Instability and Intermittency in Stochastic Systems

- **N.V. Kuznetsov, G.A. Leonov** (Russia)

Cycles and Strange Behavior of Trajectories in Two Dimension Quadratic Systems

**10.30 – 11.00 Coffee break**

**11.00 – 12.30 Session 8**

- **I. Bula, J. Buls, I. Rumbeniece** (Latvia)

Why Can We Detect the Chaos?

- **R.S. Smirnova, M.V. Zakrzhevsky,**

**V.Yu. Yevstignejev, I.T. Schukin** (Latvia)

Paradoxes of Linear and Nonlinear Damping in the Totally Dissipative Driven Oscillators

**13.00-14.00 Lunch**

**16.00 – 20.00 River trip with picnic**

## Friday, September 12

**9.00 – 10.30 Master-class 2: RA and MCBG**

**11.00 – 12.00 Round-Table Discussion**

(Chair Prof. I. Blekhman)

New Problems in Nonlinear Dynamics and Rare Dynamical Phenomena

**Closing ceremony**

**13.00 – 14.00 Lunch**