

Project ON 144002 -Theoretical and Applied Mechanics of the Rigid and Solid Bodies. Mechanics of Materials (2006-2010)

Projekt ON144002 Teorijska i primenjena mehanika krutih i čvrstih tela. Mehanika materijala.

Support: Ministry of Sciences and Environmental Protection of Republic of Serbia

Institution Coordinator: Mathematical Institute Serbian Academy of Sciences and Arts.

Project Leader: Katica (Stevanović) Hedrih

Researchers: 38.

Researcher months: approximately 136 months. (by contract)

Report – Research Results in 2008. Istraživački rezultati u 2008.

I. Radovi u časopisima sa visokim impact faktorom - Publikovani

Hedrih (Stevanović K., Energy analysis in a nonlinear hybrid system containing linear and nonlinear subsystems coupled by hereditary element (Article), NONLINEAR DYNAMICS , (2008) vol.51 br.1-2 str. 127 -140 **R51a**
<http://www.springerlink.com.nainfo.nbs.bg.ac.yu:2048/content/rg2302474v1ru044/>
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?ISSN=0924-090X>

Hedrih (Stevanović K. and Simonović J., Transversal Vibrations of a Double Circular Plate System with Visco-elastic Layer Excited by a Random Temperature Field, International Journal of Nonlinear Sciences and Numerical Simulation, 2008, Vol. 9, No.1, pp.47-50. **R51a**
<http://www.ijnsns.com/2008/TOC9.1.doc>
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?ISSN=1565-1339>

Katica (Stevanović) Hedrih, (2008), Energy transfer in double plate system dynamics, Acta Mechanica Sinica, Volume 24, Number 3 / June, 2008, pp. 331-344, DOI 10.1007/s10409-007-0124-z, Springer Berlin / Heidelberg, ISSN (567-7718 (Print) 1614-3116 (Online), **R51**
<http://www.springerlink.com.nainfo.nbs.bg.ac.yu:2048/content/rg2302474v1ru044/>
<http://www.springerlink.com.nainfo.nbs.bg.ac.yu:2048/content/248380442p246217/>

Katica (Stevanović) Hedrih, (2008), Energy interaction between linear and nonlinear oscillators (Energy transient through the subsystems in the hybrid system), ISSN 1027-3190. Ukr. mat. Qurn., 2008, t. 60, # 6, pp. 796-814. **R51**
<http://springerlink.com/content/5717572370176j67/>
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/ElecasDet.aspx?ID=34971&ISSN=0041-5995>

Hedrih (Stevanović K., Transversal forced vibrations of an axially moving sandwich belt system, Archive of Applied Mechanics, Springer, (2008) vol.78 br.9 str. 725-735 **R52**
<http://www.springerlink.com.nainfo.nbs.bg.ac.yu:2048/content/2081u5426316886m/>
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?ISSN=0939-1533>

Hedrih (Stevanović K., Vibration Modes of a axially moving double belt system with creep layer ,Journal of vibration and Control, (2008), 14(10-Sep): 1333-1347. **R52**
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?ISSN=1077-5463>

Hedrih (Stevanović) K., (2008), Dynamics of multipendulum systems with fractional order creep elements, Special Issue Vibration and Chaos, Journal of Theoretical and Applied Mechanics, Quaterly, (Warsaw, Poland) No.3 Vol. 46, pp. 483-509. **R52**
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?ISSN=1429-2955>

Hedrih (Stevanović) K., (2008), Dynamics of coupled systems, Journal Nonlinear Analysis: Hybrid Systems, Volume 2, Issue 2, June 2008, Pages 310-334. in line at <http://www.sciencedirect.com/science/journal/1751570X> **R52**
Napomena: Nova serija casopisa sa ISI liste

Gabbert U., Nestorović T., Wuchatsch J.: Methods and possibilities of a virtual design for actively controlled smart systems, Computers and Structures 86 (2008), Elsevier, pp. 240-250, doi:10.1016/j.compstruc.2007.01.041, ISSN: 0045-7949 **R51a**
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/ElecasRes.aspx?KW=Computers%20and%20Structures>
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?issn=0045-7949>

Oleg Aleksandrovich Goroshko and Katica (Stevanovic) Hedrih. Advances in development of the analytical dynamics of the hereditary discrete systems, Journal of Physics: Conference Series, 96(2008) 012143
IOP Publishing - Journal of Physics:ConferenceSeries
<http://www.iop.org/EJ/main/-list=current/>

Katica (Stevanović) Hedrih, Analogy between dynamics of thermo-rheological and piezo-rheological pendulums, Journal of Physics: Conference Series, 96 (2008) 012219 doi:10.1088/1742-6596/96/1/012219, IOP Publishing

2007 International Symposiumon Nonlinear Dynamics(2007ISND) IOP Publishing
Journal of Physics: Conference Series 96 (2008) 012219doi:10.1088/1742-6596/96/1/012219

IOP Publishing - Journal of Physics:ConferenceSeries
<http://www.iop.org/EJ/main/-list=current/>

Katica (Stevanović) Hedrih , Optimal Control of Dissipative Nonlinear Dynamical Systems with Triggers of Coupled Singularities, Journal of Physics: Conference Series, 96 (2008) 012220doi:10.1088/1742-6596/96/1/012220, IOP Publishing

2007 InternationalSymposiumonNonlinearDynamics(2007ISND) IOP Publishing
Journal ofPhysics:ConferenceSeries 96 (2008) 012220doi:10.1088/1742-6596/96/1/012220

IOP Publishing - Journal of Physics:ConferenceSeries
<http://www.iop.org/EJ/main/-list=current/>

Katica (Stevanović) Hedrih and **Ljiljana Veljović**, Nonlinear dynamics of the heavy gyro-rotor with two skew rotating axes, Journal of Physics: Conference Series, 96 (2008) 012221doi:10.1088/1742-6596/96/1/012221, IOP Publishing

2007 InternationalSymposiumonNonlinearDynamics(2007ISND) IOP Publishing
Journal of Physics: Conference Series 96 (2008) 012221doi:10.1088/1742-6596/96/1/012221

IOP Publishing - Journal of Physics:ConferenceSeries
<http://www.iop.org/EJ/main/-list=current/>

Hedrih (Stevanović) K., (2008), Thermo-rheological hereditary elements and discrete continuum model dynamics, "Mashinoznavstvo", Ukraine, # 2 (128) za 2008 god na str. 18 - 27. (in English).

Hedrih (Stevanović) K., Transversal vibration of a parametrically excited hereditary beam: Influence of rotatory inertia and transverse shear on stochastic stability of deformable forms and processes , International IFNA-ANS Journal "Problems of nonlinear analysis in engineering systems", ISSN 1727-687X, is published (in two languages, in English and in Russian): (No.2(30), v.14, 2008,115-140).
http://www.kcn.ru/tat_en/science/ans/journals/ansi_cnt.html
http://www.kcn.ru/tat_en/science/ans/journals/ansi_cnt.html
http://www.kcn.ru/tat_en/science/ans/journals/ansi_cnt.html
http://www.kcn.ru/tat_en/science/ans/journals/ansi.html

Gabbert U., Nestorović T., Ringwelski S.: *Computational design of smart lightweight structures to control vibration and noise*, Proceedings of Tenth Pan American Congress of Applied Mechanics (PACAM X), January 7-11, 2008, Cancun, Mexico, Vol. 12, 2008, pp. 190-193, ISBN 978-0-615-18385-5

Nestorović T.: Recension of the book: Nader, Manfred: Compensation of Vibrations in Smart Structures: Shape Control, Experimental Realization and Feedback Control, Trauner Verlag, Schriften der Johannes-Kepler-Universität Linz, Reihe C: Technik und Naturwissenschaften, Band 54, 2008, 19,80 €, ISBN 987-3-85499-286-5 in TECHNISCHE MECHANIK, Wissenschaftliche Zeitschrift für Grundlagen und Anwendungen der Technischen Mechanik, Band 28 (2008), Heft 2, Seite 120, <http://www.uni-magdeburg.de/ifme/techmech.html>

Nestorović T.: Book Review: Manfred Nader, Compensation of Vibrations in Smart Structures: Shape Control, Experimental Realization and Feedback Control in, ZAMM - Journal of Applied Mathematics and Mechanics – Zeitschrift für Angewandte Mathematik und Mechanik, Volume 88 Issue 10, Page 816, Published Online: 25 Sep 2008, Copyright © 2008 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim, Digital Object Identifier (DOI) 10.1002/zamm.200890018, <http://www3.interscience.wiley.com/journal/5007542/home>

Debeljkovic, D.Lj., S.B. Stojanovic, Systems, Structure and Control - Editior Petr Husek, – Chapter: Asymptotic Stability Analysis of Linear Time Delay Systems: Delay Dependent Approach, I – Tech, Vienna, ISBN 978-7619-05-3, 2008, 29 – 60.

<http://intechweb.org/>

<http://intechweb.org/downloadfinal.php?is=978-953-7619-05-3&type=B&PHPSESSID=rf4orduk31dj8p9l3brkq4gmd4>

Stojanovic S.B., D.Lj. Debeljkovic, Quadratic stability and stabilization of uncertain linear discrete-time systems with state delay: a LMI approach, *Dynamics of Continuous, Discrete and Impulsive Systems, Series B: Applications & Algorithms* Vol. 15, No. 2b, 2008, 195-206. **Kategorija časopisa po KOBSON-u – R52**

http://monotone.uwaterloo.ca/~journal/DCDIS_B/index.html

http://dcdis001.watam.org/volumes/fulltext_pdf/2008v15/v15n2b-pdf/195-206d1191.pdf

Debeljkovic, D. Lj., Stojanovic, S.B., Visnjic, N.S., Milinkovic, S.A., A quite new approach to the asymptotic stability theory: discrete descriptive time delayed system, *Dynamics of Continuous, Discrete and Impulsive Systems, Series A: Mathematical Analysis* Vol. 15, 2008, No. 4a, 469-480. **Kategorija časopisa po KOBSON-u – R52**

http://monotone.uwaterloo.ca/~journal/DCDIS_A/index.html

http://dcdis001.watam.org/volumes/fulltext_pdf/2008v15/v15n4a-pdf/13_469-480.pdf

Stojanovic, S. B., D. Lj. Debeljkovic, “**Delay – Dependent Stability of Linear Large Scale Time Delay Systems Necessary and Sufficient Conditions**”, *International Journal of Information & System Science*, (Canada), Vol. 4, No. 2, (2008), pp. 241 – 250.

Debeljkovic, D. Lj, S. B. Stojanovic, S. A. Milinkovic,

Lj. A. Jacic., N. S. Visnjic, M. Pjescic, “**Stability in the sense of Lyapunov of Generalized State Space Time Delayed Systems : A Geometric Approach**”, *International Journal of Information & System Science*, (Canada), Vol. 4, No. 2, (2008), pp. 278 – 300.

Lazarevic, M. P., D. Lj. Debeljkovic, “**Robust Finite Time Stability of Nonlinear Fractional Order Time Delay Systems**”, *International Journal of Information & System Science*, (Canada), Vol. 4, No. 2, (2008), pp. 301 – 315.

Kiković, B., D. Lj. Debeljković, N. S. Visnjic “**Modeling the road vehicle with hydrodynamics brakes**”, *International Journal of Information & System Science*, (Canada), Vol. 4, No. 3, (2008), pp. 394 -409

Debeljkovic D. Lj, N. S. Visnjic, M. Pjescic, “**The Stability of Linear Continuous Singular Systems over the Finite Time Interval: An Overview**”, *International Journal of Information & System Science*, (Canada), Vol. 4, No. 4, (2008), pp. 560 – 584.

[Marinković D., Köppe H., Gabbert U.: “Degenerated Shell Element for Geometrically Nonlinear Analysis of Thin-Walled Piezoelectric Active Structures”](http://www.iop.org/EJ/abstract/0964-1726/17/1/015030), Smart Materials and Structures 17 (015030), 10 pp., 2008.

<http://www.iop.org/EJ/abstract/0964-1726/17/1/015030>

[Marinković D., Zehn M. W.: “Aspects of Mesh Distortion and Locking Phenomena in FE Modeling of Thin-Walled Piezoelectric Active Structures”](http://www.iop.org/EJ/abstract/0964-1726/17/1/015030), Joint 8th World Congress on Computational Mechanics and 5th European Congress on Computational Methods in Applied Sciences and Engineering (WCCM8/ECCOMAS 2008), Venice, Italy, 2008.

Marinković D., Marinković Z.: “**Active Composite Laminates – a Step Forward in Structural Design and Performance**”, in Kuzmnović S. (Ed.) MACHINE DESIGN - monograph, University of Novi Sad – Faculty of Technical Sciences, ADEKO, Novi Sad, 2008. pp. 115 ÷ 120.

II. Radovi u časopisima sa visokim impact faktorom - u štampi

Hedrih (Stevanović K., Main chains and eigen modes of the fractional order hybrid multipendulum system dynamics, IOP PUBLISHING PHYSICA SCRIPTA, Phys. Scr. **78** (2008) 000000 (12pp) doi:10.1088/0031-8949/78/8/000000
<http://www.iop.org/EJ/journal/1402-4896>
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/ElecasRes.aspx?KW=%20PHYSICA%20SCRIPT>
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?issn=0031-8949>

Hedrih (Stevanović K., Energy transfer in the hybrid system dynamics (Energy transfer in the axially moving double belt system), Arch Appl Mech, Special Issue, © Springer-Verlag 2008, DOI 10.1007/s00419-008-0285-7
<http://www.springerlink.com/nainfo.nbs.bg.ac.yu:2048/content/2081u5426316886m/>
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?ISSN=0939-1533>

Hedrih (Stevanović K., Tensor equations of discrete dynamically defined and undefined systems with hereditary and creep light elements, was accepted for publication in the Scientific Annals of "Al.I. Cuza" University of Iasi, number 2 in 2009, pp.???. Rad posvecen Radu Miron \ Proffesor Anastasiei said me that your paper submitted to Iasi will be publisher in issue number 2 in 2009.

Gabbert U., Lefèvre J., Laugwitz F., Nestorović T.: Modelling and analysis of piezoelectric smart structures for vibration and noise control, International Journal of Applied Electromagnetics and Mechanics, ISSN: 1383-5416 (accepted)
<http://nainfo.nbs.bg.ac.yu.nainfo.nbs.bg.ac.yu:2048/Kobson/service/jcr.aspx?issn=1383-5416>

Stojanovic, S. B, D. Lj., Debeljkovic, “ Delay-dependent stability of linear discrete time delay systems ”, *Problems of Nonlinear Analysis in Engineering Systems* (Kazan, Russia), **Vol. 14, No. 2 (30) (2008)**, pp.....

III. Radovi u časopisima sa liste Ministarstva za nauku i tehnologiju Republike Srbije

Katica (Stevanović) Hedrih and Simonović Julija, Dynamical Absorption and Resonances in the Sandwich Double Plate System Vibration with Elastic Layer, Scientific Technical Review, Vol.LVII, No.2,2007,pp. 1-10.

Napomena: Ostraniceno i publikovano u 2008.

Katica (Stevanović) Hedrih, *Leonhard Euler (1707-1783) and Rigid Body Dynamics*, Scientific Technical Review, Vol. LVII, No. 3-4, Belgrade, 2007 . pp. 3-12. YU ISSN 1820-0206

Napomena: Ostraniceno i publikovano u 2008.

Julka Knežević-Miljanović: THE PERIODIC BOUNDARY VALUE PROBLEM, Mathematica Montisnigri, 20,2008. ISSN 0354-2238 UDK 517.911

S. B. Stojanovic, D. Lj. Debeljkovic, Delay-dependent stability of linear discrete large-scale time-delay systems: necessary and sufficient conditions, International Journal of Information and Systems Sciences, Vol. 4, No. 2, 2008, 241-250.

<http://www.math.ualberta.ca/ijiss/>

<http://www.math.ualberta.ca/ijiss/SS-Volume-4-2008/No-2-08/SS-08-02-05.pdf>

D. Lj. Debeljkovic, S. B. Stojanovic, S. A. Milinkovic, N. S. Vinjic, M. Pjescic, Stability in the sense of Lyapunov of Generalized State Space Time Delayed System A Geometric Approach, International Journal of Information and Systems Sciences, Vol. 4, No. 2, 2008, 278-300.

<http://www.math.ualberta.ca/ijiss/>

<http://www.math.ualberta.ca/ijiss/SS-Volume-4-2008/No-2-08/SS-08-02-09.pdf>

S.B.Stojanovic, D.Lj.Debeljkovic Stability of linear discrete time delay systems, International Journal "Problems of nonlinear Analysis in Engineering Systems", Vol. 2 No. 30, 2008.

http://www.kcn.ru/tat_en/science/ans/journals/ansj.html

http://www.kcn.ru/tat_en/science/ans/journals/ansj.html

http://www.kcn.ru/tat_en/science/ans/journals/ansj_cnt/08_2_4.html

Sreten B. Stojanovic, Dragutin Lj. Debeljkovic, Ilija Mladenovic, Simple exponential stability criteria of linear discrete time-delay systems, Serbian journal of electrical engineering, Vol. 5, No. 2, 2008, 191-198.

<http://www.journal.tfc.kg.ac.yu/>

http://www.journal.tfc.kg.ac.yu/Vol_5-2/02-Stojanovic-Debeljkovic-Mladenovic.pdf

Debeljkovic, Lj. D., S. B. Stojanovic, “**Asymptotic Stability Analysis of Particular Classes of Linear Time-Delay Systems: A New Approach**”, *NTP* (Serbia), Vol. LVIII, No. 1, (2008), pp. 01 – 18.

Dimitrijević Dejan, Nikolić-Stanojević Vera: Eigenfrequency Analysis of the Spur Gear Pair with Moving Excentric Masses on the body of One of the Gears, FME Transactions, Volume 35, Number 3, 2007, pp. 157 ... 163.

D. Dimitrijević, V. Nikolić-Stanojević, ...: Dynamic Analysis of the Stress and Strain State of the Spur Gear Pair, SCIENTIFIC TECHNICAL REVIEW, 3-4. 2007., pp. 20 ... 25.

V. Ranković and I. Nikolić, Identification of Nonlinear Models with Feedforward Neural Network and Digital Recurrent Network, FME Transactions, Vol. 36, No 2, 2008, pp. 87-92. ISSN 1451-2092.

IV. Poglavlja u monografijama medjunarodnog značaja

Hedrih (Stevanović K., *Stochastic dynamics of hybrid systems with thermo-rheological hereditary elements; Modeling, Simulation and Control of Nonlinear Engineering Dynamical Systems*, State-of-the-Art, Perspectives and Applications, Awrejcewicz, Jan (Ed.), Springer, 2008, Approx. 450 p., Hardcover, ISBN: 978-1-4020-8777-6

Veljko A. Vujičić, Non consonance in theory of Mechanics: Knowledge and Science, Monograph, Advances in Nonlinear Sciences, ANN, 2008, Vol. 2, pp.162-224.

Вељко А. Вујичић, Несагласје у теорији Механике: Знања и Наука, Monograph, Advances in Nonlinear Sciences, ANN, 2008, Vol. 2, pp. 163-225.

Katica R. (Stevanović) Hedrih, The fractional order hybrid system vibrations, Monograph, Advances in Nonlinear Sciences, ANN, 2008, Vol. 2, pp. 226-326.

Катица Р. (Стевановић) Хедрих, Осцилације хибридних система рационалног реда, Monograph, Advances in Nonlinear Sciences, ANN, 2008, Vol. 2, pp. 227-327.

Hedrih (Stevanović K., *The optimal control in nonlinear mechanical systems with trigger of the coupled singularities*, pp. 174-182, in the book: Advances in Mechanics : Dynamics and Control : Proceedings of the 14th International Workshop on Dynamics and Control / [ed. by F.L. Chernousko, G.V. Kostin, V.V. Saurin] : A.Yu. Ishlinsky Institute for Problems in Mechanics RAS. – Moscow : Nauka, 2008. –ISBN 978-5-02-036667-1

V. Monografije nacionalnog značaja:

Debeljkovic, Lj. D., G. V. Simeunovic, **Analysis and Synthesis of Multivariable Control Systems using Root Locus Method**, Faculty of Mechanical Engineering, Belgrade, 2008 (*in Serbian*), pp. 448.

Debeljkovic, Lj. D., D. T. Stojiljkovic, G. V. Simeunovic, A. M. Sicovic, V. S. Mulic, **Dynamics of Processes – Mathematical Model of Plants and Processes in Control Engineering, Part IV – Dynamics of Large - Scale Industrial Plants and Processes**, Faculty of Mechanical Engineering, Belgrade, 2008 (*in Serbian*), pp. 470.

Pjescic, R M., V. Chistyakov, D. Lj. Debeljkovic, **On Dynamical Analysis of Particular Class of Linear Singular Time Delayed Systems: Stability and Robustness**, Faculty of Mechanical Engineering, Belgrade, 2008 (*in Serbian*), pp. 445.

Debeljkovic, Lj. D., **Linear System Design: Pole Placement Methods Part III**, Mechanical Faculty Engueering, Belgrade, 2008, (*in Serbian*) pp. 438.

Debeljkovic, Lj. D., G. V. Simeunovic, A. M. Sicovic, **Dynamics of Processes – Mathematical Model of Plants and Processes in Control Engineering, Part V**, Faculty of Mechanical Engineering, Belgrade, 2008 (*in Serbian*), pp. 450.

VI. Doktorske magistrske disertacije

VI.1. Oblast Teorijska i primenjena mehanika

VI.2. Oblast konstruisanje i otpornost konstrukcija

1. Mr Dejan Dimitrijević: "ДИНАМИЧКИ МОДЕЛИ НАПОНСКОГ И ДЕФОРМАЦИОНОГ СТАЊА ЕЛЕМЕНТА ЗУПЧАСТИХ ПРЕНОСНИКА" mentor Vera Nikolić. Odbranjena maja 2008.
2. Mr Zorica Đorđević: "ДИНАМИЧКО ПОНАШАЊЕ ВРАТИЛА ОД КОМПОЗИТНИХ МАТЕРИЈАЛА", mentor Vera Nikolić. Odbranjena 114.10. 2008.
3. Mr Mirko Blagojević: "НАПОНСКО И ДЕФОРМАЦИОНО СТАЊЕ ЕЛЕМЕНТА ЦИКЛОРЕДУКТОРА ПРИ ДИНАМИЧКИМ ОПТЕРЕЋЕЊИМА" mentor Vera Nikolić. Odbranjena 31.10 2008.
4. Mr Mladen Radojković: "НАПОНСКО ДЕФОРМАЦИОНО СТАЊЕ У ЗОНАМА ГЕОМЕТРИЈСКИХ ДИСКОНТИНУИТЕТА ЕЛЕМЕНТА МАШИНСКИХ КОНСТРУКЦИЈА", mentor Vera Nikolić. Odbranjena 25. 10 2008.
5. Mr Vesna Marjanović: ANALIZA DINAMIČKOG PONAŠANJA ROTORA SA POPREČNOM PRSLINOM", mentor Ružica Nikolić, Odbranjena 27.10.2008.

VII. Publikovana predavanja, predavanja po pozivu, kao i saopštenja na medjunarodnim skupovima u 2008.

U okviru IUTAM ICTAM Adelaide 2008, *Katica R. (Stevanović) Hedrih* održala je "Session Lecture" u okviru sekcije Oscilacije struktura - **SM19 :: Structural vibrations**, kojom su predsedavali Co-chairs: *Marian Wiercigroch* (UK) and *Pedro Ribeiro* (Portugal).

Najviš mog predavanja je:

Katica R. (Stevanović) Hedrih (August 29, 2008, Fri 11:20-B)

Phenomenological mapping method and mathematical analogy of hybrid system dynamics, XXII International Congress of Theoretical and Applied Mechanics Abstracts Book, Edited by J. Dernier, M.D. Fim and T. Mattner, Adelaide 2008, p. 317, ISSN 978-0-9805142-0-9, p. 317, and CD-ROM ISSN 978-0-9805142-1-6, pp. 10135, 1-2..
(vidi WEB [ictam2008.adelaide.edu.au.](http://ictam2008.adelaide.edu.au/)).

Katica (Stevanović) HEDRIH, (2008), Dynamically determined and undetermined hereditary discrete systems (External and internal degrees of freedom in the hybrid hereditary dynamics), **Invited Lecture-Key note Lecture**, The Euromech Colloquium 498 Nonlinear Dynamics of Composite and Smart Structure (NDCS) -Nonlinear Dynamics and Chaos of Composite and Smart Structures (NDCS), May 21-23, 2008, Kazimierz Dolny, POLAND. Lublin 2008, pp. 29-39.

Katica (Stevanović) HEDRIH and Julijana Simonović, (2008), Non-linear dynamics of the sandwich double circular plate system, The Euromech Colloquium 498 Nonlinear Dynamics of Composite and Smart Structure (NDCS) -Nonlinear Dynamics and Chaos of Composite and Smart Structures (NDCS), May 21-23, 2008, Kazimierz Dolny, POLAND. Lublin 2008, pp. 170-175.

O. Goroshko, K. Hedrih. Dynamics of the hereditary discrete systems, Proceedings Nonlinear Dynamics , Dedicated to the 150th Anniversary of A.M. Lyapunov, Polytechnic Kharkov, 2008. ,pp. 77-82

K.R. (Stevanović) Hedrih. For optimal time of study: vector and tensor methods in classical mechanics., Proceedings Nonlinear Dynamics, Dedicated to the 150th Anniversary of A.M. Lyapunov, Polytechnic Kharkov, 2008. pp. 98-107.

Katica (Stevanović) Hedrih, A new vector view to classical Mechanics: Kinetic impacts to the rotate rigid bodz bearing, Book of Extended Abstracts, X-th E.S. Pyatnitskiy International Workshop on Stability and Oscillations of Nonlinear Control Systems (3 – 6 of June, 2008). This Workshop will be devoted to the memory of the Academician Valentin V. Rumyantsev (1921 – 2007). Edited by *Vassilyev S.N. (Russia) chairman*, The Institute of Control Sciences of the Russian Academy of Sciences, Department of Power Engineering, Industry, Mechanics, Control of RAS and the Scientific Council on Automation and Control Theory, Moscow, pp. 338'350.

Katica (Stevanović) Hedrih, Mathematical analogy between hybrid system dynamics, 45 minutes **Invited Plenary Lecture**, Book of Extended Abstracts, Edited by Alexander M. Kovalev (IAMM NASU, kovalev@iamm.ac.donetsk.ua), **10th International Conference "Stability, Control and Rigid Bodies Dynamics" Donetsk (Ukraine), June 2008, pp. 125-127.**

Katica (Stevanović) Hedrih, Kinematical vector rotators in the rotor dynamics, 30 minutes First Sectional Lecture, Book of Extended Abstracts, Edited bz Alexander M. Kovalev (IAMM NASU, kovalev@iamm.ac.donetsk.ua), **10th International Conference "Stability, Control and Rigid Bodies Dynamics" Donetsk (Ukraine), June 2008, pp. 123-125.**

Stojanović S.B., D.Lj. Debeljković, Necessary and Sufficient Conditions for Delay-Dependent Asymptotic Stability of Linear Discrete Time Delay Autonomous Systems, *17th IFAC World Congress*, Seoul, Korea, July 6-11, 2008, 2613-2618, CD Rom.
<https://ifac.papercept.net/conferences/scripts/abstract.pl?ConfID=4&Number=1964>

Simeunović, G. V, P. Zitek, D. Lj. Debeljković, “**Differential – discrete mathematical model of the recuperative counter – flow heat exchanger**”, *Proc. 16th International Conference on Nuclear Engineering*, Orlando, Florida (USA), May 11 – 15, (2008), CD-Rom.

Stojanovic, S. B., D. Lj. Debeljkovic, “**Necessary and Sufficient Conditions for Delay-Dependent Asymptotic Stability of Linear Discrete Time Delay Autonomous Systems**” *Proc. of 17th IFAC World Congress*, Seoul, Korea, 06 – 10, (2008), pp. 2613 – 2618, Paper MoC6.3, ISSN 978 - 1 - 1234 – 7890 - 2 08, CD-Rom.

Debeljković, D. Lj., B. Kikovic, V. S. Mulic, “**Contribution on Briquetting Rattan In The Constant Density Briquette**”, *Proc. Industrial energetic IEEP 08*, 24-28. june 2008. Hotel Palisad, Zlatibor, Serbia

Debeljković, D. Lj., Lj. A. Jacić, G. Simeunović, “**The Stability of Linear Continuous Singular Time Delayed Systems in the sense of Lyapunov**”, Vrnjačka Banja, (Serbia), October 15 – 17, (2008), p

Simonovic J., (2008), *Phenomenon of coupled structures of mechanical systems*, the 22nd International Congress of Theoretical and Applied Mechanics (ICTAM2008), Book of Abstracts and CD-ROM Proceedings, pp. ,The School of Mathematical Sciences, The University of Adelaide, Australia, ISBN 978-0-9805142-0-9,

VIII. Apstrakti i predavanja po pozivu, kao i saopštenja na domaćim skupovima

Julka Knežević-Miljanović:, International Conference "Differential Equations and Topology", dedicated to the 100th Anniversary of the birthday of L.S. Pontryagin , June 17-22, 2008 in Lomonosov Moscow State University. Moscow, Russia
abstrakt, i izlaganje

Julka Knežević-Miljanović:, 5th European Congress of Mathematics in Amsterdam, 14 - 18 July, 2008. organized under the auspices of the European Mathematical Society abstrakt, poster

IX. Reference sa primenama u inženjerstvu

Radovanovic M., Madic M., Application of Artifical Neural Network Model for Predicting the Main Cutting Force by Turning, Nadiinist instrumentu ta optimizacija tehnologicnih sistem, Zbirnik naukovih prac, Vipusk 23, 2008, Ministerstvo osviti i nauki Ukraini, Donbaska deržavna mašinobudivna akademija, ISBN 978-966-379-250-7, Kramatorsk-Kiiv, Ukraine, 2008, pp. 34-39

Janković P., Radovanović M., Correlation of Cutting Data by Abrasive Water Jet, Annals of the Oradea University, Fascicle of Management and Technological Engineering, Volume VII (XVII), 2008, ISSN 1583-0691, Universitatea din Oradea, Oradea, Romania, 2008, pp. 1528-1533

Janković P., Radovanović M., Water Quality Used by Water Jet Machines, Annals of the Oradea University, Fascicle of Management and Technological Engineering, Volume VII (XVII), 2008, ISSN 1583-0691, Universitatea din Oradea, Oradea, Romania, 2008, pp. 1534-1538

Radovanovic M., Madic M., Jankovic P., Comparasion of Regression Models for Predicting the Components of Cutting Force, International Scientific Conference UNITECH'08, Technical University of Gabrovo, ISSN 1313-230X, Gabrovo, Bulgaria, 2008, pp. II-472-II-475

Radovanovic M., Madic M., Jankovic P., Artificial Neural Network Modeling of Cutting Force Components by Turning, International Scientific Conference UNITECH'08, Technical University of Gabrovo, ISSN 1313-230X, Gabrovo, Bulgaria, 2008, pp. II-486-II-490

Radovanovic M., Madic M., Jankovic P., Application of Neural Networks in Metal Cutting, 8th International Conference "Research and Development in Mechanical Industry" RaDMI 2008, ISBN 978-86-83803-24-3, Užice, Serbia, 2008, pp. 322-328

Jankovic P., Radovanovic M., Characteristics of Part Accuracy and Errors by Abrasive Water Jet Cutting, 8th International Conference "Research and Development in Mechanical Industry" RaDMI 2008, ISBN 978-86-83803-24-3, Užice, Serbia, 2008, pp. 215-220

Radovanovic M., Madic M., Jankovic P., Comparison of Regression Model and Artificial Neural Network Model for Predicting the Main Cutting Force by Turning, Buletinul Institutului Politehnic din Iasi, Publicat de Universitatea Tehnica "Gh. Asachi", tom LIV (LVIII), fac.2, Sectia Constructii de Masini, 12th International Conference TCMR-2008, ISSN 1011-2855, Iasi, Romania, 2008, pp. 95-104

Jankovic P., Radovanovic M., Experimental Investigation and Mathematical Modeling of Cutting Speed by Abrasive Water Jet, The Sixth International Triennial Conference "Heavy Machinery - HM2008", ISBN 978-86-82631-45-3, Faculty of Mechanical Engineering Kraljevo, University of Kragujevac, Kraljevo, Serbia, 2008, pp. F.29-32

Јанковић П., Радовановић М., Класификација и својства абразивних материјала при обради абразивним воденим млаузом, ХИПНЕФ 2008, машински факултет Универзитета у Нишу, Савез машинских и електротехничких инжењера и техничара Србије СМЕИТС – Београд, ISBN 978-86-80587-87-5, Врњачка Бања, 2008, с. 587-592

Јанковић П., Радовановић М., Чисте технологије у функцији екологизације производних процеса, I конференција Одрживи развој и климатске промене, ISBN 978-86-80587-84-4, Универзитет у Нишу, машински факултет, Ниш, 2008, с. 155-159.