

KATICA (Stevanović) HEDRIH

**Full professor-Scientific Research Full Professor – Project Leader of Project ON174001 (2011-2019)
 in Mathematical Institute Serbian Academy of Sciences and Arts Belgrade (2009-)
 Full professor and the Head of the Chair for Mechanics (1977-1979, 1981-1983, 1986-2004)
 Head of Centre of Nonlinear Dynamics and Active Structure (2005-2009)
 Vice-dean for scientific-teaching area (1978-1980) at the Mechanical Engineering Faculty of the
 University of Niš**

**Academician of Ukrainian Higher schools and universities Academy of Sciences (from 1996)
 Academician of Ukrainian Higher Education Academy of Sciences
 Member of Serbian Scientific Society (from 2008) and
 scientific secretary of Department of Natural mathematical sciences (2010-2016)
 External member of “Matica Srpska” Novi Sad (from 2010?)
 Academician of the Academy of Nonlinear Sciences Moscow (from 1997)
 Scientific Secretary of the Yugoslav Branch of Academy of Nonlinear Sciences (1997-2010)
 Member of American Academy of Mechanics
 Member of International American Society of Mechanical Engineeris (from 2000)
 Member of Tensor Society (from 1992)
 Member of GAMM (from 1974)**





Katica (Stevanović) HEDRIH, Doctor of Technical Sciences, Scientific Research Full Professor in Mathematical Institute Serbian Acadmy of Scienve and Arts, Belgrade, University Professor, Bachelor Mechanical Engineer, Full Professor and the Head of the Chair for Mechanics at the Mechanical Engineering Faculty of the University of Niš (1977-1979, 1981-1983, 1986-2004) and a Full Professor of the Mechanical Engineering Faculty, University of Priština, Project Leader of

republic scientific projects: Subproject – Current problems of mechanics with applications (1995-2000), Project 1616 - Real Problems on Mechanics (2001-2004), Sub-Project: 04M03A Current Problems on Mechanics and Applications (1996-2000), at the Mathematical Institute of SASA in Belgrade, Project 1828 –Dynamics and Control of Active Structure (2001-2004) at Faculty of Mechanical Engineering Niš, current Project ON144002 Theoretical and Applied Mechanics of the Rigid and Solid Bodies. Mechanics of Materials (2006-2010), **ON174001** - Dynamics of hybrid systems with complex structures. Mechanics of materials. (2011-2019) at the Mathematical Institute of SASA in Belgrade, an academician of **THE of Ukrainian Higher schools and universities Academy of Sciences (from 1996)**, an academician of the **Higher Education Academy of Sciences of Ukraine** (since 1996), a **member of Serbian Scientific Society** (starting from 2008) and an academician of the **International Academy of Nonlinear Sciences ANS. – Moscow** (since 1997), Editor-in-chief of the University of Niš scientific journal “**FACTA UNIVERSITATIS**” (1989-2004) and Editor-in-Chief of the Series Mechanics, Automatic Control and Robotics (1990-2007), member of Editorial Board of **Int. Journal Nonlinear Sciences and Numerical Simulations, Freund Publishing House LTD** (1999-2009), and **J. Mathematical Problems in Engineering**, Hindawi Publishing Corp.<http://www.hindawi.com/> (2004-2016), a member of GAMM and Tensor Society, member of International ASME, American Academy of Mechanics and a European Society for Mechanics Member. She is also reviewer and referee of the numerous university scientific publications and papers published by Elsevier, Springer, Hindawi Press, Freund Publishing House and other (with more than 100 reviews). Referee of *Zentralblatt* (with more than 100 reviews). She is the author of the monographs: *Vectors of the Mass Moments* (1998), *Analytical Dynamics of Discrete Hereditary Systems* (co-author O.A. Goroshko, 2001), *The Vector Method of the Heavy Rotor Kinetic Parameters Analysis and Nonlinear Dynamics* (2001) and *Dynamics of Vubroimpact systems* (with S.Jović and V. Raičević, 2015). She was the chief and project-leader of a number of scientific projects in areas of mechanics and mechanical engineering. She is one of co-authors of the research project and SASA edition-publication - *The Life and Work of Serbian Scientists* with four published bibliographies. She is the author of a number of scientific papers, and of university study books and textbooks in the area of Oscillations Theory, Theory of Elasticity, Strength of Materials, Mechanics, Mathematical Physics, Philosophy of Natural Sciences, History of Mechanics. She was a supervisor of a number of magisterium of sciences (10) and doctoral dissertations (10) in the area

of technical sciences – nonlinear and deformable body mechanics and member of numerous commission for evaluation of the master of Science and doctoral dissertations (more than 52). Her papers and books were cited many times and two papers were cited by *Yu. A. Mitropolskiy and B.I. Moseenkov in Monograph: Asimptotičeskie rešenja uravnenij v časnih proizvodnih*, Kiev 1976, (Listed under No. 138 and 139) and also one paper in monograph *Aly Nayfeh, Dean T. Mook, (1976), Nonlinear oscillations, John Wiley and Sons, 1976, New York*. Also important citations four papers by *Katica (Stevanović) Hedrih, published in the period 2002-2010, in the field of the application of a differential fractional order calculus in the mechanics of discrete and deformable systems, are cited, among others, in the leading and prestigious reference journal Applied Mechanics Reviews, 2010, published by International American Society of Mechanical Engineers (Int.ASME), USA* in paper by *Yuri Rossikin and Marina Shitikova*. Her first doctors of technical sciences are now university professors and Project leader and supervisor of new generation of the Ph. D. students.

Katica R. (Stevanović) HEDRIH was born on August 28th 1944 in village Bobovište, Aleksinac. After Second world war she lived in Niš. As a member of the first Yugoslav competition team she was a contestant of the Fifth Mathematical Olympics in Wrocław, Poland, in 1963. She graduated at September 30, 1967, mechanical engineering, the first in generation (started at October 1, 1963), as the best graduated student of the faculty and, also, at the University of Niš in 1966/67. She carried the “štafeta mladosti” in 1969. She got a Magisterium of Science degree in the area of mechanics (1972) and became a Doctor of the Technical Sciences (1975) at the Mechanical Engineering Faculty of University in Niš, and she also took and passed the candidate minimum (1971) in Theoretical and Mathematical Physics, the area of Nonlinear Oscillations and Nonlinear Differential Equations at the Institute of Mathematics of the Ukrainian National Academy of Science in Kiev evaluated by commission headed by academician Y. A. Mitropolskiy. She is a University full professor since February 3, 1986.

She was the organizer of two Yugoslav congresses on theoretical and Applied Mechanics (YUCTAM Niš-1995 and Vrnjačka Banja 1997), as well as of a number of minisymposia of international rank ((YUSNP Niš 1991 and YUSNM Niš 2000, ISNM NSA Niš 2003, Integrity of Dynamical Systems at IFNA WCNA, Orlando, 2004; Integrity of Dynamical Systems –European Fracture Conference EFC16-Greece 2006 and APM Saint Petersburg 2007; MS – Analytical Mechanics at Nonlinear Dynamic

Shanghai 2007, MS – Kinetic Control and Vibrorheology at ESMC Lisbon 2009 and ICDVC Hangzhou 2010m and other.).

She is the author of a number (10) of university study books and textbooks in the area of Oscillations Theory, Theory of Elasticity, Strength of Materials, Mechanics, Partial Differential Equations and Integral Equations with Application in Engineering, Philosophy of Natural Sciences, History of Mechanics.

She attended, with invited lectures or as invited participant, numerous University Mechanics Seminars or Scientific Meetings in the area of nonlinear mechanics (University of Rochester Seminar 1989, USA; University of Waterloo Seminar on Mechanics 1989., Canada; Rochester Institute of Technology, 1989.; IUTAM Symposium-Nonlinearity and Chaos in Engineering Dynamics, UCL 1993.; Inter. Conf.: *Stability, Control and Rigid Bodies Dynamics - ICSCD 96*, Donetsk – Mariupol; Seminar on *National Technical University of Athens, 1986.*; *SANU - Serbian Greek Symposium on Solid Mechanics 1997.*; *Greek-Germany-Polish-Serbian Symposium on Mechanics - Recent Advances in Mechanics, Xanthi, 1998, Democritus University of Thrace*; Third International Symposium on Classical and Celestial Mechanics, Velikie Luki, Russia, 1998; *Parallel General Lecture-Third International Conference on Nonlinear Mechanics ICNM 1998, Shanghai, China*; *5th National Congress on Mechanics, Ioannina, 1998. Patras 2007*; *Int. IEEE-Conference Control Oscillations and Chaos COC 2000 Saint Petersburg, Russia*; *ISUMEL Lvov 2001,2003,2005,2007,2009 Ukraine*; Int. Symposium *Dynamical Systems and Applications-Lodz 2001, 2010. Poland*; Int. Conf. *Differential Geometry and it's Applications*, Tensor Society Tsukuba, Japan 2002.and Sapporo 2007, Tokiyo 2015, Tsukuba 2016, Matsumoto 2-017; Int. Symposium *Analysis, Manifolds and Mechanics*, Calcutta, 2003, University of Kalyani, India, 2003 and 2007, IUTAM Symposium Chaotic Dynamics and Control of Systems and Processes in Mechanics , Roma 2003.Workshops IFAC FDA Bordeaux 2004, Porto 2006, Ankara 2008, ENOC Moscow 2002, Eindhoven 2005, Rome 2011, Wiena 2015, Bidapest 2017; DINCON Brasil 2010, Nonlinear Vibrations Virginia Tech 2010, ICDVC Hangzhou 2010, and other) and contribution papers, of a large number of leading international congresses and scientific meetings, as well as of university scientific seminars (Ukraine, Canada, USA, Germany, Byelorussia, Greece, Israel, Austria, Bulgaria, Chesz, China, England, Denmark, Russia, Poland, Japan, Romania, Turkey, Portugal, France, India, Australia, Brazil, ...) in the area of mechanics and Nonlinear Dynamics and she is the author of over 400 bibliographical units in areas of mechanics, technical sciences and

mathematics. Her papers were referenced in well-known reference journals. She is the author of the monographies: *Vectors of the Mass Moments* (1998), *Analytical Dynamics of Discrete Hereditary Systems* (co-author O.A. Goroshko, Ukraine 2001) and *The Vector Method of the Heavy Rotor Kinetic Parameters Analysis and Nonlinear Dynamics* (2001). She was the chief and project-leader of a number of scientific projects in areas of mechanics and mechanical engineering starting from the 1977. Shi is founder and chair of two Scientific Seminars; Theoretical and Applied Mechanics at Mechanical Engineering Faculty University of Niš (1976-2004) and Nonlinear Dynamics – Milutin Mulanković (starting from 2005). Katica (Stevanović) HEDRIH is, also, a member of the numerous International Scientific Meeting held in Ukraine, Yugoslavia, Poland, China, Turkey, Makedonia, Serbia, India and other.

She was, as a student a member of the first University Council in Niš (1975), and as a full professor a member of the first Educational-scientific Council of the University in Niš (1987-1988), and a member of the governing board (1994-1998) of the Mathematical Institute of Serbian Academy of Science and Arts in Belgrade. Shi was a vice-dean of Faculty of Mechanical Engineering at University of Niš. Shi was head of Department of Mechanics (2010-2012) at Mathematical Institute of Serbian Academy of Science and Arts in Belgrade.

Books:

Vectors of the Mass Moments (Topics from Mathematics and Mechanics), *Selected Chapters of Nonlinear Oscillation Theory*, *Selected Chapters of Elasticity Theory*, *Collections of solved exams problems of Elasticity Theory*, *Collections of solved exams problems of Oscillation Theory*, *Collections of solved exams problems of Oscillation Theory* (co-author P. Kozić), *Collections of solved exams problems of Strength of Materials* (co-author M. Maksić), *Natural Sciences today* (co-authors M. Antić and D. Djordjević), *Ljubomir Klerić (SASA Life and work of Serbian Scientists – First volume)*, *Kosta Alković (SASA Life and work of Serbian Scientists – Third volume)*, *Tatomir P. Andjelić (SASA Life and work of Serbian Scientists – Sixth volume)* and *Danilo P. Rašković (SASA Life and work of Serbian Scientists – Tenth volume)* and *Tatomir P. Andjelić (CD – 125 anniversary of Mathematical Institute Belgrade)*, *Partial Differential and Integral Equations with Applications* (co-authors S. Janković and P. Protić), *Analytical Dynamics of Discrete Hereditary Systems* (co-author O.A. Goroshko), *The Vector Method of the Heavy Rotor Kinetic Parameters Analysis and Nonlinear Dynamics*, and other.

Editor in Chief of the Following Journals: *Facta Universitatis* (1990-2004), *Facta Universitatis Series Mechanics, Automatic Control and Robotics*, University of Niš (1991- 2007), and Editor of a number of Scientific Proceedings and ANN Monograph Advances in Nonlinear Sciences (Vol. 2, 2008) and other.

Member of Editorial Board of the following Journals: *International Journal of Nonlinear Sciences and Numerical Simulations*, Freund Publishing House LTD (period 1999-2009), *Facta Universitatis Series Living and Working Environmental Protection*, University of Niš (2001-), *Nauka Tehnika Bezbednost* (Science Technique Security), Institut bezbednosti, Beograd (2001- 2005) , *J. Mathematical Problems in Engineering*, Hindawi Press (2004-2016), *Journal of Non-Linear Modeling in Science and Engineering*, <http://www.demon.co.uk/cambsci/ijnms.html>, Scientific Technical Review SA (2006-2016), Journal of Serbian Society for Computational Mechanics (Serbian Society for Computational Mechanics, from 2007, <http://www.sscm.kg.ac.rs/jsscm/>) and other.

Referee of *Zentralblatt für Mathematik und ihre Grenzgebiete Berlin* (more than 100 reviews) and Journals *Theoretical and Applied Mechanics*, JDM, Beograd.(1975-1997, 2003-2019), *Facta Universitatis Series Mechanics, Automatic Control and Robotics*, University of Niš (1990-2004), *Facta Universitatis Series Living and Working Environmental Protection*, University of Niš (1995-), *Facta Universitatis Series Mechanical Engineering*, University of Niš (1993-), *Neurosciences letters*, Elsevier, *Journal of Sound and Vibrations*, Elsevier, *European Polymer Journal*, Elsevier, *FME Transaction*, Faculty of Mechanical Engineering University of Belgrade, *Material Letters*, Elsevier, *Journal Nonlinear Analysis - Theory, Methods and Applications*, Series B: Real-world Applications, Pergamon Press, *Acta Mechanica Sinica*, JVS, *Journal of Solid and Structures*, *Nonlinear Dynamics*, *J. Of Nonlinear Mechanics*, *The Proceedings of Shanghai International Symposium on Nonlinear Science & Applications'03*, as a special issue of *International Journal of Bifurcation & Chaos* published by World Scientific Co., *Archive of Applied Mechanics - Manuscript Central Account Info* (SY-23)-Springer, *Workshop Preprints/Proceedings No 2004-1 IFAC workshop on Fractional Differentiation and its Applications FDA 04*, ENSEIRB, Bordeaux France, July 19-21, 2004. *Signal Processing*, Elsevier, *ENOC 2005*, *EuroMech*, and other.



Professors: *Draginja Nikolić, professor of Mathematics, Professor Dr Ing. Math. Danilo P. Rašković, Academician Yuriy Alekseevich Mitropoljskiy, Academician Tatomir P. Andjelić, Professor dr Dragoslav Mitrinović, Profesasor dr Jurij Korobov. academician Nikola Obradović, academician Vojislav Djurić, acadmivian Petar Miljanić, Professor Victor Saljnikov, Lecturer Vojislav Birviš and other.*

Subject Reference: *Mechanics, Nonlinear Machanics, Theory of Oscillations, Theory of Elasticity, Elastodynamcs, Photoelasticity, Piezoelectructicity, Ultrasonics, Electromechanical Systems, Mechanical Engineering, Applied Mathematics, Physical Mathematics; Strength of Materials, Machine Dynamics, Computational Mechanics, Control Motions and Nonlinear Dynamical Systems, Analytical Dynamics, Damage and Fracture Dynamics, Active Structure Dynamical Systems, History and Philosophy of Sciences.*

Honours and Awards:

Best graduate student of 1966/67 at Faculty of Mechanical Engineering, and Best graduate student of 1966/67 at University of Niš. **Gold hand's wach is award** (presented by scientist Branimir Janković First Revtor of University of Niš).

Best Thesis of Bachelor's (Master) degree at Yugoslav Faculties of Engineering and Natural mathematical sciences , 1967, by Electronic Industry EI Niš (presented by director Vladimir Jasić).

Fact: *For period of 33 years (from 1960 to 1993) between students at Mechanical Engineering Faculty University of Niš K. (Stevanović) Hedrih is student whit best examine evaluations (9,67) and all exams in first examination term. Shi defended diploma work September 30, 1967, bevore starting period “apsolvent” for her generation.*

Member of the Olympic Team of Yugoslavia at International Mathematical Olympiad in Vroclav Poland (1963) as result of numerous diploma of susesful results at competition in Yougodlavia im mathematics.

“Štafeta mladosti” in 1969 and **Gold Watch Prize-present of Yugoslav President** with signature **“Tito”**, 1969.

Medallion (Plague)**“Archimed”** and Charter 2007 of Scientific-Technical Institute of Serbian Army for scientific work and member of Editorial Board of the **Journal Scientific Technical Review** of Serbian Army..

Prize **Saint Volodimir (Nagrada Svatoga Volodimira)** for 2010 of Ukrainian Higher Schools and Universities Academy of Sciences.

Medallion (Plaque) and Charter 2008 of Cankaya University, Ankara, Turkey for Scientific advances in **IFAC FDA Workshop Fractional differentiation and Applications**.

Medallion (Plaque) and Charter 2010 of Cankaya University, Ankara, Turkey for Scientific advances in **International Conference Nonlinear Sciences and Complexity – NSC 2010**.

Gold Medallion of Faculty of Mechanical Engineering of Niš.1985, **Medallion in 1995** of Faculty of Mechanical Engineering of Niš for First Postgraduate Student – First Magistar of Technical Science (in Mechanics, shu started at March 1970 and defendded Magistar of science dissertation in 1972).

Prize of Local Editorial Zentralblatt Belgrade 1999;

First Prize of the Yugoslav Association of Pedagogues for Pedagogical Critique 2000;

Short lectures at Scientific Congresses and Symposiums approximately 200; Invited Scientific Lectures at Scientific Congresses and Symposiums, and Seminars: approximately 50. Invited Plenary and Keynote Lectures more then 20.

Supervisor of Doctor of Technical Sciences Theses 10; Supervisor of Magister of Technical Sciences Theses 10; Member of scientific commissions for evaluations of scientific levels and defense of Doctor of Technical Sciences Theses 26 and of Magister of Technical Sciences Theses 27; Supervisor of graduated student (equivalent to Master degree now) works 10 and member of commissions for defense more then 100.

Scientific Project Leader 7 in area of basic sciences (Mechanics) and each with duration of 5 years and Scientific Sub Project Leader 3 supported by Ministry of Science; Researcher at Projects of Technology 5; Professional Projects in Mechanical Engineering (Project Leader (4) or Research (3)).

Scientific Papers in International and National Journals and Chapters in Books: approximately 90, and total approximately more then 300.

Scientific Visits and participation in the Seminars or international Scientific Meetings : multiple visits to Ukraine-Kiev, Donetsk, Lvov and Kharkov (1969, 1970, 1996, 1998, 2001, 2003, 2015, 2017), Russia-Moscow State University and Institute on Mechanics as well as Institute of Control and Institute of Mechanical Engineering Problems in Russia (1995,

97, 98, 2000, 2002, 2005, 2007, 2008), Poland- University of Cracow, Warsaw and Poznanj and Lodz and Sedlice (1963, 1999, 2001, 2003, 2005, 2007, 2009, 2013, 2015, 2017), Germany GAMM, England (1993, 2003), Byelorussia, University of Waterloo, (1989), ICTAM Montreal 2016, Canada, Institute of Technology Rochester (1989), Cornell University (1989) USA., Israel Institute of Technology (1992), Technical University of Athens (1997), Shanghai University China (1998, 2002), Poland Technical University Lodz (2000), Technical University of Denmark, Lyngby, Copenhagen Denmark (1977, 1999), Tsukuba University and Tensor Society .Japan (2002, 2015,2016, 2017), M.C. Chaki Centre for Mathematics and Mathematical Sciences, Calcutta, India, 2003, University of Kalyani, India, 2003., University La Sapienza Roma IUTAM (2003. 2011, 2017, 2018, 2019), Romania Politehnika Timisoara (2002), Technical University of Wien (2003, 2015), Greece Aristotelian University Tessaloniki (2003), Tianjin University China 2004, University of Ljubljana (2002), ENSEIRB Bordeaux 2004, WCNA Orlando 2004, University of Luisiana, Lafayette USA 2006, University Otto von Guericke 2004., Politehnika Warsaw 2004, University of Luxembourg 2005, ICTAM Adelaide, Australia 2008, Porto 2008, Lisbon Portugal ESMC 2009, Brasil 2010, Virginia Tech 2010, University in Huzhou 2010, Beijing 2013 China. Iashtu Alexander Ion Cuza University 2013m 2015, Romania, GAMM annual scientific meetings Graz 1974., Laypzig 1882, Dresden, Darmstadt, ... Germanu, and other

Prof. Dr K. (Stevanović) Hedrih has been further honored with inclusion in Who's Who in Serbia and as a fellow of the American Biographical Institute Research Association. The American Biographical Institute also named her "Woman of the Year" for 1997, with biographical listings in Five Thousand Personalities of the World and the International Directory of Distinguished Leadership. International Directory of Distinguished Leadership (by the Editorial Board ABI)- Eighth Edition 1998. Member of the ABI's Research Board of Advisors -RBA 1998. Distinguished biography of the MILLENNIUM HALL OF FAME 1998-ABI. (Hall of Fame Testimonial Plaque). 2000 Millennium MEDAL OF HONOR - ABI 1998. ABI - American Biographical Institute - Research Fellow Recognition 1996 - 24K gold-plated coin engraved ABI Research Fellow. K. Hedrih is listed in the Directory of the European Research and Development and the Who's Who in European Research and Development 2003. 2000 Outstanding People of the 20th Century - Incorporating the Outstanding Achievement Awards, International Biographical Center Cambridge, CB2 3QP, England.(1998). Also in 2018, 2019 numerous

invitation by *Marquis Who's Who* in the form: “*Katica R. (Stevanovic) Hedrih, you have been chosen for Marquis Who's Who. This impressive distinction is reserved for less than 3% of professionals world-wide!* “

Professional Career:

Assistant, Faculty of Mechanical Engineering, University of Niš, (1968-1975)

Assistant Professor, Faculty of Mechanical Engineering, University of Niš, (1975-1981)

Associate Professor, Faculty of Mechanical Engineering, University of Niš, (1981-1985)

Full Professor, Faculty of Mechanical Engineering, University of Niš, (1986-....)

Full Professor – Scientific Research Full Professor at Mathematical Institute SANU Belgrade (2009-..)

Full Professor on Mechanics at Technical Faculty in Bor University of Belgrade (1986-1989)

Full Professor on Theory of Vibrations at Mechanical Engineering University of Priština (1994-2008)

Elected for Full Professor on Mechanics at Faculty of Technical Academy of Yugoslav National Army (1998)

Head of the Chair for Mechanics (1977-1979, 1981-1983, 1986-2004)

Vice-dean of Faculty of Mechanical Engineering University of Niš (1978-1980).

Seminar Leader: Seminar in Theoretical and Applied Mechanics at Faculty of Mechanical Engineering University of Niš (1976-2005) and Seminar Nonlinear Dynamics – Milutin Milanković (2005-2009) in Niš under the auspices of Mathematical Institute of Serbian Academy of Science and Arts - Belgrade.

Project Leader in area of Mechanics at Mathematical Institute of Serbian Academy of Science and Arts - Belgrade (1990 -);

Project leader in area of Mechanical Engineering and Mechanics at Faculty of Mechanical Engineering University of Niš (1976 – 1995, 2001-2005, 2006-2010, 2011-2019);

Expert of Yugoslav Ministry of Sciences, Technology and Development in area 1111 Mathematics, 1113 Physics and 1223 Mechanical Engineering.

President of Organizing Committee and Member of Scientific Committee of XXI Yugoslav Congress of Theoretical and Applied Mechanics Niš 1995 and XXII Yugoslav Congress of Theoretical and Applied Mechanics Vrnjačka Banja 1997; Symposium of Serbian Society of Mechanics "Nonlinear Problems in Mechanics" Arandjelovac 1983; "YUGOSLAV CONFERENCE ON

NONLINEAR DETERMINISTIC AND STOCHSTIC PROCESSES IN DYNAMICAL SYSTEMS WITH APPLICATIONS" Niš 1991; Minisymposium "Nonlinearity and Chaos in Engineering Dynamics" Niš 1995., The Fifth Symposium on Nonlinear Mechanics – The Nonlinear Sciences at the Threshold of Third Millennium Niš 2000.

Member of Governing Board of Mathematical Institute Serbian Academy of Science and Arts, Beograd (1994-1998).

АКАДЕМІЯ НАУК УКРАЇНСЬКОЇ ССР
Інститут Математики

ПРОТОКОЛ
случає кандидатського мінімуму по спеціальній дисципліні

Дата Листопада 1997 г.

Фамілія, ім'я, отчество аспіранта Стефанович Р Катюша
Спеціальність (по аспірантурі) Математика і математична фізика
Найменування спеціальної дисципліни Методи нелінійних коливань

Предметні питання:	Оцінка
1. Построение асимптотических решений для уравнения $\ddot{x} + \omega^2 x = \varepsilon f(x, \frac{dx}{dt})$	отлично
2. Основание метода усреднения. Пример метода Боголюбова Н.Н.	отлично
3. Классические консервативные системы с двумя степенями свободы. Кривые тороидальной динамики.	отлично

Общая оценка отлично

Председатель экзаменационной комиссии д-р физ.-мат. наук В.А. Митропольский
Члены комиссии: д-р физ.-мат. наук Р.А. Дворничук, д-р физ.-мат. наук М.А. Боголюбов, д-р физ.-мат. наук В.Н. Митрофанов, д-р физ.-мат. наук В.А. Кривошапко, д-р физ.-мат. наук В.А. Кривошапко, д-р физ.-мат. наук В.А. Кривошапко

Примечание: Все вопросы изложены черными и в разборе. Поступившие должны быть отпущены в сокращенном порядке по решению комиссии. Протокол является ученой запиской института, только членом экзаменационной комиссии.

Там, где: АН УССР, д. 117-990, Киев, 25.9.98

ХАРАКТЕРИСТИКА
научных результатов стажера Института математики АН УССР
СТЕПАНОВИЧ К.Р.

Тов.Степанович К.Р. за время стажировки при Институте математики АН УССР в отделе математической физики и теории нелинейных колебаний в течение года занимался исследованием колебаний систем с распределенными параметрами асимптотическими методами, развиваемыми в отделе.

Рассмотрены свободные и вынужденные двухчастотные поперечные колебания балки.

Дана конкретная новая форма уравнений первого приближения для амплитуд и фаз на основе которых выведено первое асимптотическое приближение и первое улучшенное приближение и их энергетическая интерпретация.

Для случая вынужденных колебаний балки на упругом основании с нелинейной характеристикой закона упругости основания сделаны выводы о взаимном влиянии гармоник внешней силы.

Рассмотрены влияния квазипериодической внешней силы и группы сил, приложенных к грузу или группе грузов и движущихся вдоль балки с переменными скоростями. Построены графики амплитудных кривых прохождения через резонансные значения частот возмущающих сил и дан их качественный анализ. Новизна поставок состоит в том, что учитывается изменяющаяся скорость движения грузов.

Рассмотрено взаимное влияние гармоник внешней возмущающей силы с несколькими частотами, близкими к первой собственной частоте на свободные поперечные колебания балки с линейными, однородными и слабо нелинейными кривыми условиями.

Все работы выполнены на высоком математическом уровне. Перечисленные выше результаты являются оригинальными и дополняют или уточняют имеющиеся исследования в этом направлении. По результатам работы дано в печать 4 статьи и подготовлено к печати 2 статьи.

Достиженные стажером К.Р. Степанович научные результаты находятся на уровне требований, предъявляемых к кандидатским диссертациям в СССР.

Директор Института математики АН УССР
академик АН УССР В.А. Митропольский

Асимптотичний метод Крилова-Боголюбова-Митропольського

Юрій Олексійович Митропольський
(21 грудня 1916 (3 січня 1917), Шишаки — †14 червня 2008^[1], Київ)

Боголюбов Микола Миколайович (старший)
(8 (21) серпня 1909, Нижній Новгород, Російська імперія — 13 лютого 1992, Москва, Росія)

Крилов Микола Митрофанович

(рос. Николай Митрофанович Крылов; 17 (29) листопада 1879, Петербург, Російська імперія — 11 травня 1955, Москва, СРСР)





Research and Authentic Author Scientific Results

Katica R. (Stevanović) Hedrih

in the period longer than half a century (from 1963-2019)

http://www.mi.sanu.ac.rs/novi_sajt/research/conferences/ksh/Eng%20Scientific%20results%20K.%20Hedrih.pdf

http://www.mi.sanu.ac.rs/novi_sajt/research/conferences/ksh/ABOUT%20HEDRIH.htm

http://www.mi.sanu.ac.rs/novi_sajt/research/conferences/ksh/default.htm



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Hedrih (Stevanović) K., *Application of the Asymptotic Method for the Investigation of the Nonlinear Oscillations of Elastic Bodies - Energy Analysis of the Oscillatory Motions of Elastic Bodies*, [in Serbian], Doctor's Degree Thesis, Faculty of Mechanical Engineering in Niš, (1975). Supervision: Prof. dr. Ing. Math Danilo P. Rašković (Yugoslavia) and academician Yuriy Alekseevich Mitropolskiy (Ukraine).

1* The first published works half a century ago (52 years old), whose contents are still current, event today in 2019:

Stevanović R. Katica (later merried family name Hedrih), Ubrzanje drugog reda (trzaj ili džerk) materijalne tačke koja se kreće konstantnom sektorskom brzinom (Acceleration of second order of a material particle moving with constant sectorial velocity, Naučni podmladak, 1967, str. 69-70.

In this paper, in the case of the motion of a kinematic point, in the plane with a constant sectoral velocity, $r^2 \dot{\varphi} = C = 2S$, **the components of its second order acceleration of the radial and circular direction, as well as its angular acceleration of the second order** of rotation around the center of attraction, have been derived. The following theorem has been proved:

The circular component of the vector of the acceleration of the second order of the kinematic point, which is considered constant at the sectoral velocity, is equal to the product of the double sectoral velocity (constants $C = 2S$), the square of the reciprocal value of the radius, and the radial component of the acceleration vector of the kinematic point.

Rašković P. Danilo and Stevanović R. Katica (later married family name Hedrih), Ubrzanje drugog reda (trzaj ili džerk) krutog tela pri obrtanju oko nepomične tačke (Acceleration of second order of a rigid body rotates around fixed point), Zbornik radova Tehničkog fakulteta Univerziteta u Nuišu, 1966/1967, стр. 93-100.

In this paper, **the acceleration of the second order (truncation, Ruch, Rucken, Jerk, pulse) of some point of a rigid body, as well as its angular acceleration of the second order**, is determined by its rotation around a fixed point. First author, Rašković P. Danilo, by the matrix method, determined the acceleration of the second order of a point in a rigid body, as well as its angular acceleration of the second order, in its rotation around a fixed point. The second author, Stevanović R. Katica, using the vector method, has determined, in the natural coordinate system, the normal, tangential and complementary additional components of the second-order acceleration vector of a certain point of the rigid body, as well as its angular acceleration of the second order, in its rotation around a fixed point in the case of a regular progressive precession.

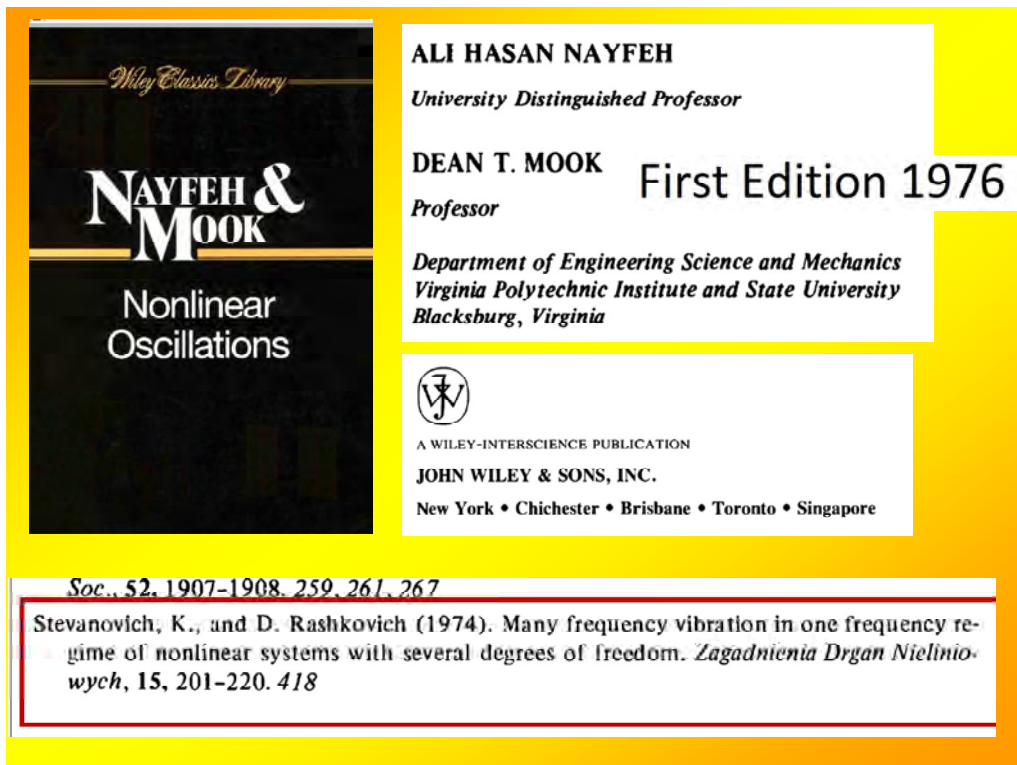
2 * First quoted papers 46 years ago in world leading monographs, asymptotic solutions of partial differential equations on nonlinear oscillations, and contents are still today, 2019, current:

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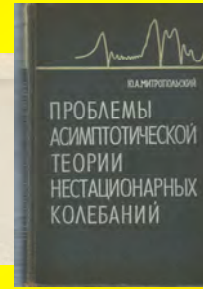
Katica Stevanovich (later married family name Hedrih), (1971), Transversal vibrations of a beam loaded by system, moving along beam with changeable velocity, containing mass particles each excited by corresponding single frequency force, Edition **Asymptotic and qualitative methods in theory of nonlinear vibrations**, Editor **Yu.A. Mitropolyski**, Institute of Mathematics Academy of Sciences of NANU, UKRAINE, USSR, Kiev, 1971, pages 15. (in Russian language).

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Yu.A. Mitropolyski and B.I. Moseenkov: Asymptotic solutions of partial differential equations, Institute of Mathematics Academy of Sciences of NANU, UKRAINE, Kiev, 1976 (in Russian language).



Губокубанов
Катиче Стевановић
на пленару о предавању
в Києве
Ю. Митрополский



List of Some Citations (List of Quotations) of Some Books and Papers written by Katica Stevanović (Hedrih) or Katica (Stevanović) Hedrih (January 2003)

1. * * Katica Stevanović (Hedrih), О поперечных колебания балки под воздействием системы масс и приложений к ним пульсирующих сил, движущимися с переменной скоростью, Ед. Аналитические и качественные методы в теории нелинейных колебаний. Редактор Ю. А. Митрополский. Институт Математики АН УССР, Киев, 1971, стр. 15.

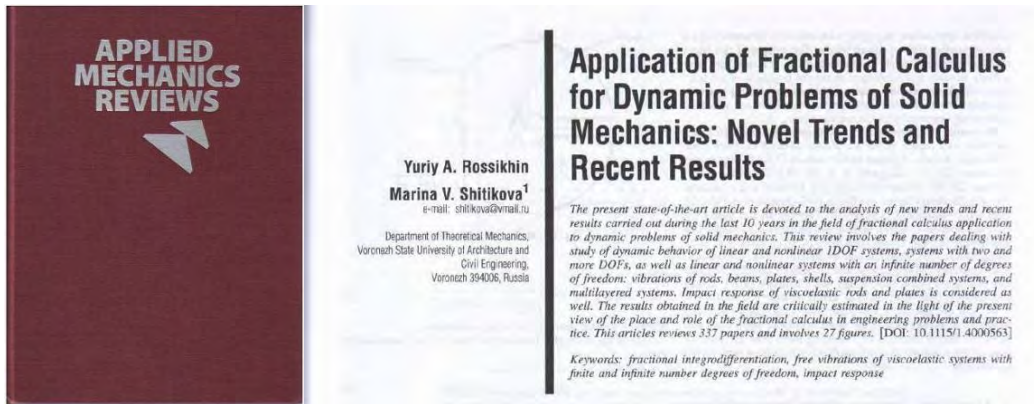
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2. * * Katica Stevanović (Hedrih), Двухчастотные нестационарные вынужденные колебания балки, Математическая физика, вып. 12, Киев, 1972, стр. 127-140.

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Katce (Stevanović) Hedrih contributed to **the analytic dynamics of discrete systems of the fraction type** through a number of published papers in journals and proceedings and through plenary lectures at international scientific meetings in the period 2002-2019.

It contributed to the introduction of **constitutive relations expressed in non-integer rational order derivative terms** for analyzing the dynamics of plates and beams with variable cross sections as well as the sandwich system of coupled deformable body systems (beams, plates, membranes and strings) and derived terms describing the **component modes of their free and forced oscillations** in the dynamics of such system of deformable bodies, as well as **complex hybrid systems**. She introduced and defined the concepts of the standard light mechanical element of the fractional type, and the corresponding **generalized functions of the fractional type energy dissipation**. It defines **a standard electric resistor of a fractional type** by defining its constituent electric-voltage-electric relay by a non-integer fractional order derivative and a generalized fractional-type electrical energy dissipation function. **She has presented a number of theorems on the change in the energy of the systems and the oscillatory oscillation systems of the fractional type.**



The papers by Katica (Stevanović) Hedrih, published in the period 2002-2010, in the field of **the application of a differential fractional order calculus in the mechanics** of discrete and deformable systems, **are cited**, among others, in the leading and prestigious reference journal **Applied Mechanics Reviews, 2010**, published by **International American Socciery of Mechanical Engineers (Int.ASME), USA**):

1. Hedtrih (Stevanović) K., (2008), Dynamics of coupled systems, Journal Nonlinear Analysis: Hybrid Systems, Elsevier, Volume 2, Issue 2, June 2008, Pages 310-334. [doi:10.1016/j.nahs.2006.06.003](https://doi.org/10.1016/j.nahs.2006.06.003)

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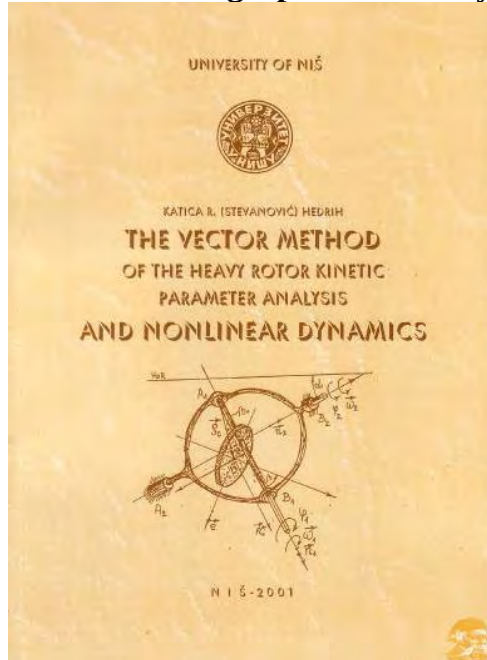
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**Asymptotic methods of Non-Linear Mechanics:
The results of theoretical research
and application of Serbian scientists in the period 1968-2016
Preseted in a Lecture by Katica (Stevanović) Hedrih**

On the occasion of a century since the birth of Academician Yuri Alekseevich Mitropolski
(За Семинар Механике Одељења за механику МИ САНУ, Среда, 22 фебруар 2017, у 18 часова)

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***Supervisor and /or Research Leader for Magistar of Sciences and Doctoral
dissertation of researchers***

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Kozić P., Izučavanje nelinearnih torzijskih oscilacija vratila asimptotskom metodom (Investigation of non-linear torsion oscillations of shafts by asymptotic method), [in Serbian], Magistar of Sciences Degree Thesis, Faculty of Mechanical

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* **Janevski G**, Dinamička stabilnost mehaničkih sistema pri dejstvu slučajnih opterećenja (Dynamic stability of mechanical system loaded by random excitation), Doctor's Degree Thesis, Faculty of Mechanical Engineering in Niš, 2010, Supervisor Kozić P.

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**Membr or Member of Komisison for defended Doctoral dissertations
and/or consultations of following doctoranes**

Mr Predrag KOZIĆ (6 mart 1990) *M
Mr Ratko PAVLOVIĆ (25 maj 1990) *M
Mr Slavka MITIĆ (mart-april 1994) *M
Mr Dragan B. JOVANOVIĆ (2009) *M
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Mr Dragan Šarković (2007) *K
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Mr Ljiljana Veljović (2011) *M
Mr Julijana Simonovic (20011) *M

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and other.

Consultation in doctoral research

Me Novak Spasojecić (Consultations for Doctoral dissertation)

and otjer

Odziv na autoreferate doktorskih disertacija (Response to auto-reports of doctoral disserarions)

Salo Valentin Andrejevich

(УДК 539.3) ЧИСЛЕННО-АНАЛИТИЧЕСКИЙ МЕТОД РЕШЕНИЯ ЗАДАЧ СТАТИКИ НЕТОНЫХ ОРТОТРОПНЫХ ОБОЛОЧЕК С ОТВЕРСТИЯМИ ПРОИЗВОЛЬНЫХ РОЗМЕРОВ И ФОРМ - 01.02.04 – *Механика деформируемого твердого тела*

Bogdan Ilich Kindratskiy

Киндрацкий Богдан Ильич, «МНОГОКРИТЕРИАЛЬНЫЙ СТРУКТУРНО-ПАРАМЕТРИЧЕСКИЙ СИНТЕЗ МАШИНОСТРОИТЕЛЬНЫХ КОНСТРУКЦИЙ», ученой степени доктора технических наук по специальности 05.02.02 — машиноведение, УДК 621.001.2:519.168

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and other

ON174001 - Dynamics of hybrid systems with complex structures. Mechanics of materials. (Period 2011-2019) , supported by Ministry of Science Republic of Serbia Researchers from tema of Project ON174001 defended Ph.D dissertation on the basis of the research scientific results of the Project ON174001

dr Ljiljana Veljovic (2011)
dr Julijana Simonovic (2012)
dr Srdjan Jovic (2011)
dr Andjelka Hedrih (2016)
dr Danilo Karlicic (2016)
dr Ljubinko Kevac (2017)
dr Radoslav Radulovic (2017)
dr Milan Cajic (2017)
dr Marija Mikic (2018)

Nine (9) one day Mini-symposiums are organized by researchers of Project ON174001 for promotion of scientific results of researchers by team of Project ON174001 Dynamics of hybrid systems with complex structures, in which a number of researchers from aboard and otjer Serbian research project were participants. Organization of 7 by new Ph.D researcher from project ON174001.

**Membr of Komission for defended Magister of sciences dissertation and/or
consultations of following doctoranes**

Predrag KOZIĆ (1981) * M*
Ratko PAVLOVIĆ (20 oktobar 1982) *M
Slavka MITIĆ (17 jun 1985) *M
Ljubiša PERIĆ (April-maj 1992) *M
Blagoj PAVLOV (7 april 1993) *M
Dragan B. JOVANOVIĆ (14 decembar 1990) *M
Snežana MITIĆ (14 decembar 1990) *M
Aleksandar FILIPOVSKI (16 jun 1995) *M
Tomislav PETROVIĆ, (1979) *K
Zvonimir MIŠETIĆ (1979) *K
Mile MAKSIĆ, (1982)K
Miodrag VELIMIROVIĆ (1985) *K
Vojislav MILTENOVIC,(1979) *K
Zoran MICKIĆ (1983) *K
Dragoslav STEVANOVIĆ (15 MART 1984) *K
Dragoljub ŠURDILOVIĆ (3 mart 1986) *K
Bojan RANČIĆ (29 septembar 1987) *K
Branko DEDOVIĆ (21 septembar 1989) *K
Dejan DIMITRIJEVIĆ (30 decembar 1997 - Kragujevac) *K
Ljudmila KUDRJAVCEVA (sept. 2000) *K
Maja JOVANOVIĆ () *M
Julijana Simonovic (2008) *M
Srdjan Jovic (2009) *M*K

and other

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.....

**Mentor of Postgraduate Magister of Science Study (1076-200) at Faculty of Mechanical
Engineering University of Niš**

.....
.....

Ratko PAVLOVIĆ
Slavka MITIĆ
Ljubiša PERIĆ
Blagoj PAVLOV
Dragan B. JOVANOVIĆ \
Snežana MITIĆ
Aleksandar FILIPOVSKI
Goran Janevski
Maksić Mile

.....
.....

and other

List of Projects

*Project Leader and SubProject Leader Katica R. (Stevanović) Hedrih
Mechanical Engineering Faculty University of Niš and Mathematica Institute SANU*

Oscillations of the System with many degrees of Freedom and Elastic Bodies with Nonlinear Properties, Basic Scientific Found of Region Niš (1979-1981). Mechanical Engineering Faculty University of Niš .

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Nonlinear Deterministic and Stochastic Processes with Applications in Mechanical Engineering Systems, Ministry of Science and Technology Republic of Serbia, (1990-1995). Some research results included in two Magistar of sciences theses of Blagoj Pavlov and Alekdsandar Filipovski and in a doctoral dissertation of Sl. Mitić. Mechanical Engineering Faculty University of Niš.

Sub-Projects 5.1. Thema: Stress and Strain State of the Deformable Bodies and 5.2. Theme: Vector Interpretation of Body Kinetic Parameters, as a part of Project: Actual Problems on Mechanic (1990-1995), Project Leader prof. dr Mane Šašić Ministry of Sciences, Technology and Development of Republic Serbia. Some research results included in three Magistar of sciences theses of Ljubiša Perić, Dragan Jovanović and Snežana Mitić. Mathematical Institute SANU.

Sub-Project: 04M03A Current Problems on Mechanics and Applications (1996-2000), as a part of **Project: Methods and Models in Theoretical, Industrial and Applied Mathematics**, Sub-Project Leader prof. Katica R. (Stevanović) Hedrih. Project Leader prof. dr Gradimir Milovanović, Ministry of Sciences, Technology and Development of Republic Serbia. Mathematica Institute SANU. (between researchers at **Sub-Project: 04M03A** are Dragović Vladimir, Jovanović Božidar, Gajić Borislav, Milena Radnović)

Project 1616 – Real Problems on Mechanics (2002-2004), Basic Science-Mathematics and Mechanics, Ministry of Sciences, Technology and Development of Republic Serbia. Some research results included in two doctoral dissertations of Ljubiša Perić and Dragan Jovanović. Mathematical Institute SANU and Mechanical Engineering Faculty University of Niš.

Project ON1828 Dynamics and Control of active Structures (2001-2005), Basic Science-Mathematics and Mechanics, Ministry of Sciences, Technology and Development of Republic Serbia. Some research results included in two doctoral

dissertations of Ljubiša Perić and Dragan Jovanović. Mechanical Engineering Faculty University of Niš.

Project ON144002 -Theoretical and Applied Mechanics of the Rigid and Solid Bodies. Mechanics of Materials (2006-2010). Support: Ministry of Sciences and Environmental Protection of Republic of Serbia. Some research results included in two Magistar of sciences theses of Srdjan Jović, and Julijana Simonović and in four doctoral dissertations of Dragan Jovanović, Srdjan Jović, Ljiljana Veljović and Julijana Simonović. Institution Coordinator: Mathematical Institute Serbian Academy of Sciences and Arts and Mechanical Engineering Faculty University of Niš.

ON174001 - Dynamics of hybrid systems with complex structures. Mechanics of materials. (2011-2019), Ministry of Sciences and Technology of Republic of Serbia. Some research results included in three doctoral dissertations of Srdjan Jović, Ljiljana Veljović and Julijana Simonović. Institution Coordinator: Mathematical Institute Serbian Academy of Sciences and Arts, and 12 faculties in Serbia are realizers, and between them Mechanical Engineering Faculties University of Belgrade and Niš, Faculty of Mathematics University of Belgrade, Innovation Centre of Electrotechnical faculty University of Belgrade, Faculty of technical sciences in Kosovska Mitrovica University of Priština, State University of Novi Pazar, Faculty of Engineering sciences of University of Kragujevac and other. .

http://www.mi.sanu.ac.rs/novi_sajt/research/projects.php

http://www.mi.sanu.ac.rs/novi_sajt/research/projects/174001a.php

Researchers from tema of Project ON174001 defended Ph.D dissertation on the basis of the research scientific results of the Project ON174001

dr Ljiljana Veljovic (2011)
dr Julijana Simonovic (2012)
dr Srdjan Jovic (2011)
dr Andjelka Hedrih (2016)
dr Danilo Karlicic (2016)
dr Ljubinko Kevac (2017)
dr Radoslav Radulovic (2017)
dr Marija Mikic (2018)
dr Milan Cajic (2017)

Nine (9) one day Mini-symposiums are organized by researchers of Project ON174001 for promotion of scientific results of researchers by team of Project ON174001 Dynamics of hybrid systems with complex structures, in which a number of researchers from abroad and other Serbian research project were participants. .

University publications written by Katica R. (Stevanović) Hedrih



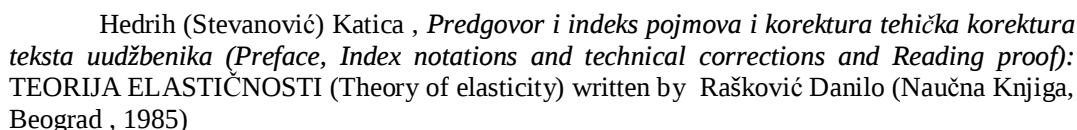
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Chapters in books written by Katica R. (Stevanović) Hedrih



Katica Stevanovic Hedrih, (2013), Nonlinear Dynamics of a Heavy Material Particle along a Circle Which Rotates and Optimal Control, Chapter in Book IUTAM Symposium on Chaotic Dynamics and Control of Systems and Processes in Mechanics, Editors: [G. Rega](#), and [F. Vestroni](#) , Volume 122 of the series Solid Mechanics and its Applications, pp 37-45. Kluwer and Springer , ISBN: 978-1-4020-3267-7 (Print) 978-1-4020-3268-4 (Online)
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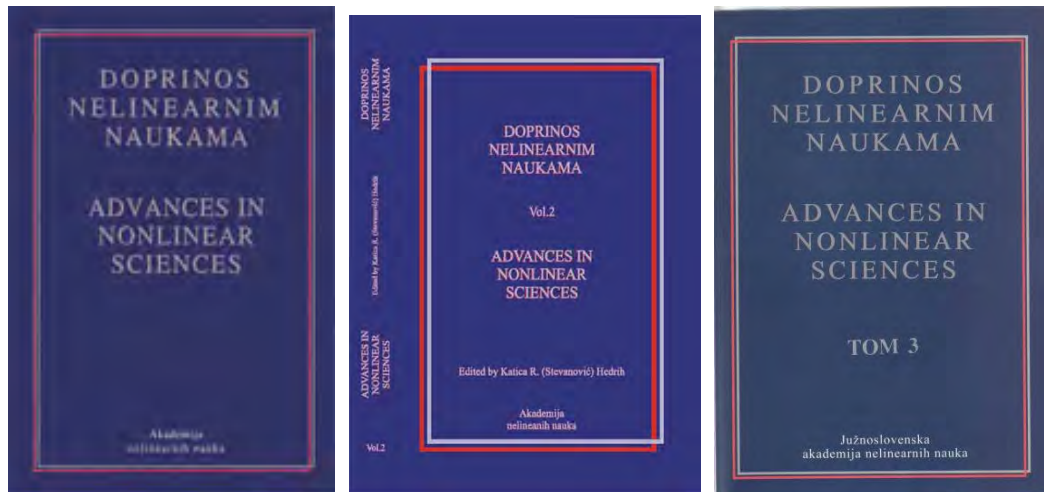
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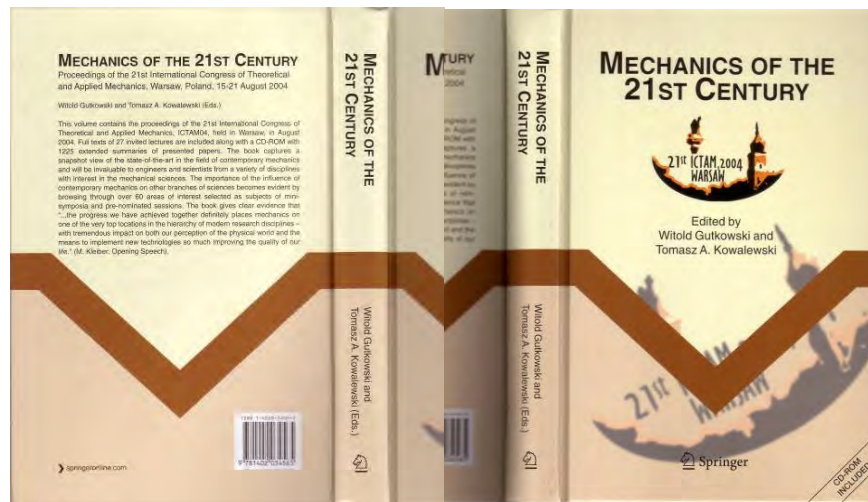
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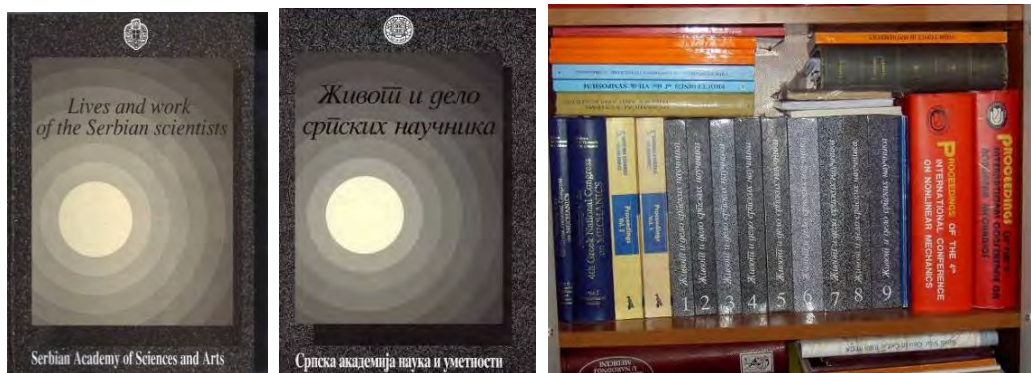
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Hystory of sciences in Serbia writtem by Katica (Stevanović) Hedrih

Katica (Stevanović) Hedrih has done a number of scientific and research works and biobibliography of Serbian scientists, among them four published biobibliographies of scientists in the field of mechanics for **the edition of the SASA "Life and work of Serbian scientists"**. She did the fifth biobibliography on Professor Vlatko Brčić in co-operation with Stanko Brčić, and she submitted her review in 2018 and is still on the review.



Edition SASA: Lives and Work of Serbian Scientists, Edited by Academician **Miloje Sarić**, Edition of Serbian Academy of Sciences and Arts, Beograd. Biographies and Bibliographies. Committee for the Research into the lives and Vork of the Scientistts of Serbian Origin (In Serbian with Abstract in English).

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* Hedrih (Stevanović), K.

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* Katica (Stevanović) Hedrih,

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* Katica (Stevanović) Hedrih i Milovan Studović

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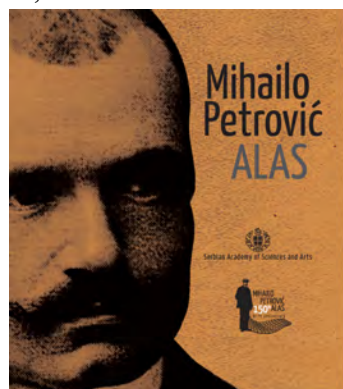
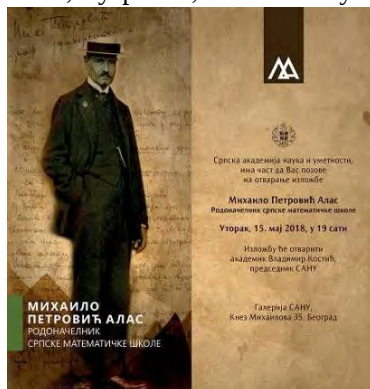
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Katica (Stevanović) Hedrih published a single address-word about **Mihailo Petrović** in the monograph "**Legends of the Belgrade University**" of the University Library "Svetozar Marković" in Belgrade and one in the publication of the Serbian Academy of Sciences and Rectorate of the University of Belgrade "**Serbian Mathematicians**". One article about the patents of Mihailo Petrović, mathematician, was written for the Catalog of the exhibition in the Gallery of the Serbian Academy of Sciences and Arts, which is dedicated to the Jubilee for the 150th anniversary of the birth of the founder of the Serbian School of Mathematics Mihailo Petrović. For the monograph on Mihailo Petrovic, published by the Serbian Academy of Sciences and Arts on the occasion of the same anniversary, she wrote an article titled: "**Mechanics and Engineering in Mihailo Petrovic's work**".

She published more than a dozen articles on Serbian and International scientists, such as Euler, Lyapunov, Sofia Kovalyevska, Pushkin and others.





Katica (Stevanović) Hedrich held a large number of studies in history and philosophy of science and thus made a significant contribution not only to the promotion of the edition of SASA **Life and Work of Serbian Scientists**, writing a number of biobibliography for the first published issue of this series on Serbian scientists in the field of mechanics: Lj . Klerić, K.Alković, T. Andjelić, D. Rašković and Vlatko Brčić, but also the promotion of Serbian science through a series of lectures at MI SANU Seminars, SANU Gallery, M3, Ilija Kolarac Foundation etc.

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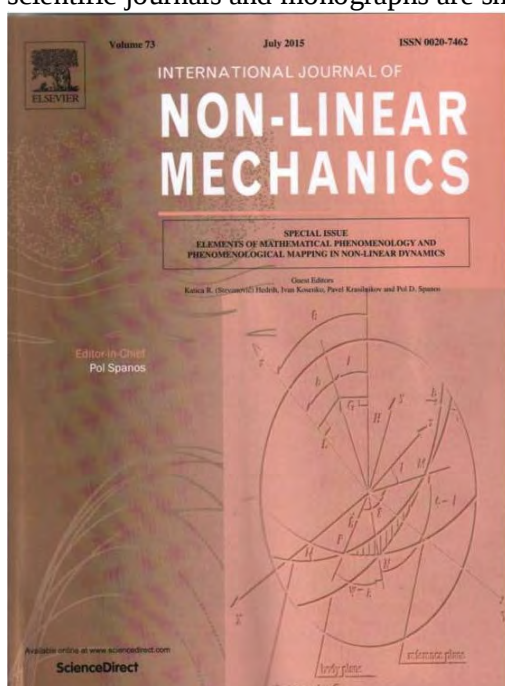
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Katica (Stevanović) Hedrih, Kostantin Kosta Alkovic I Ljubomir Klerič, prvi profesori mehanike i uticaj i uticaj mehanike na razvoj inženjerstva u Srbiji u drugoj polovini devetnaestog veka, Proceedings of YUCTAM, Vrnjačka Banja 1997, Round Table: OM. History of Mechanics in Yugoslavia, pp. 1-25.

Editorial works and scientific activity by Katica (Stevanović) Hedrih

Katica (Stevanović) Hedrih, as a competent scientist, has arranged a number of scientific publications, as a guest editor. The contributions of some of these published scientific journals and monographs are shown in the attachment.



i

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ISSN 0013-788X	SCIENTIFIC REVIEW	YU ISSN 0013-788X
SERBIAN SCIENTIFIC SOCIETY		
UDC 62-50:62-50:62-50	UDC 62-50:62-50:62-50	UDC 62-50:62-50:62-50
МАШИНО СТРОЈИШТВО ОБЈАВЕ SCIENTIFIC REVIEW New Series Series: Scientific and Engineering Special Issue: Nonlinear Dynamics 52 (2013) Dedicated to Milutin Milanković (1879- 1958) Guest Editors: Katica R. (Števanović) Hedrich and Žarko Mijačević		
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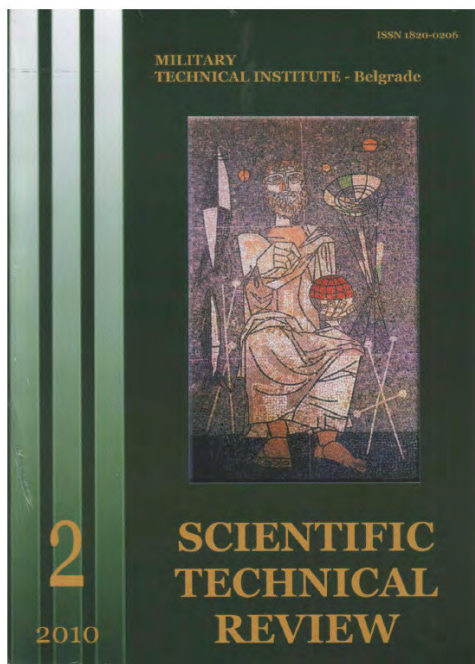
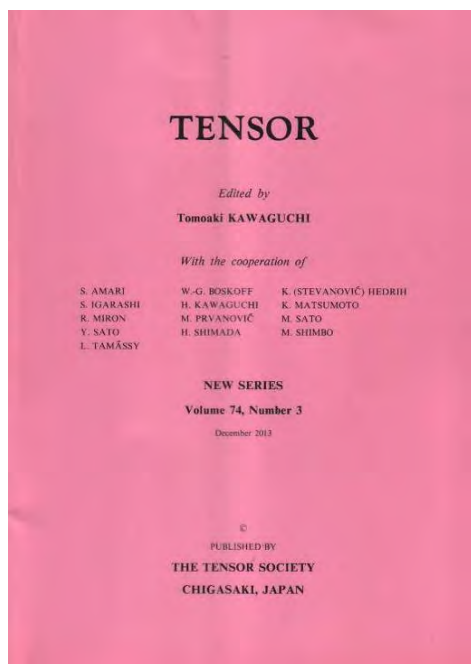
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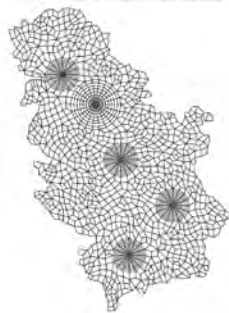
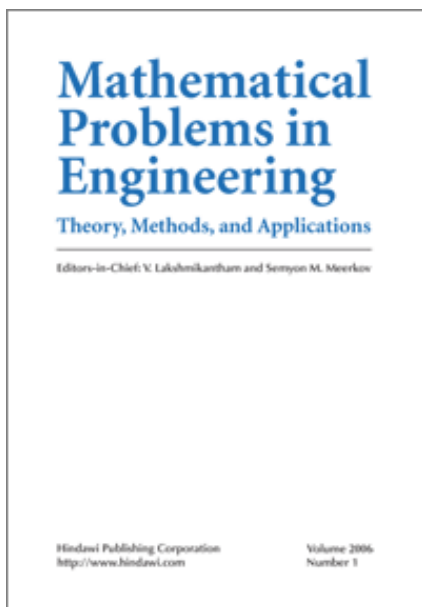
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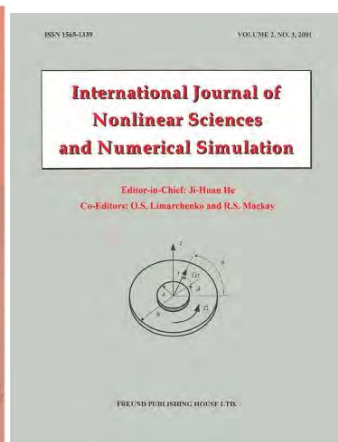
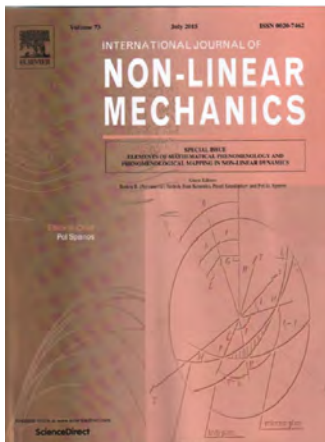
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The Scientific Journal
FACTA UNIVERSITATIS



Published by the **University of Niš**, Serbia
e-mail: facta@ni.ac.rs

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Financial support: Ministry of Science and Technological Development of the Republic of Serbia
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FACTA UNIVERSITATIS
Series Mechanics, Automatic Control and Robotics
ISSN 0354 - 2009


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The Scientific Journal FACTA UNIVERSITATIS
Series Mechanics, Automatic Control and Robotics
YU ISSN 0354 - 2009



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The Scientific Journal
FACTA UNIVERSITATIS



Series Mechanics, Automatic Control and Robotics
ISSN 0354 - 2009

Editor-in-Chief: Katica R. (Stevanović) Hedrih
Editorial Board:
e-mail: katica@masfak.ni.ac.rs
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Published by the University of Niš, Serbia
Financial support: Ministry of Science and Technological Development of the Republic of Serbia
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- Vol. 2, No. 7, 1997
- Vol. 2, No. 7/2, 1997
- Vol. 2, No. 8, 1998
- Vol. 2, No. 9, 1999
- Vol. 2, No. 10, 2000
- Vol. 3, No. 11, 2001
- Vol. 3, No. 12, 2002
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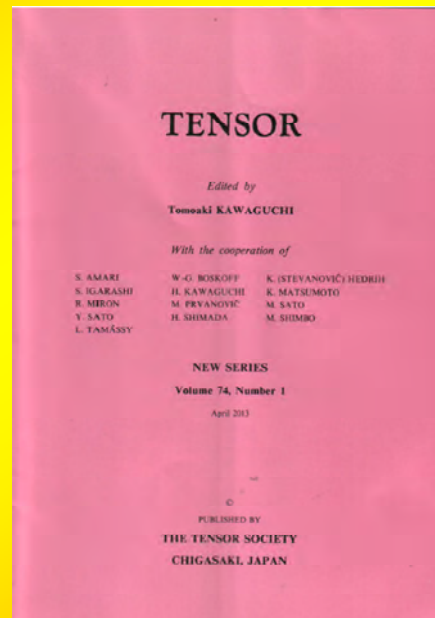
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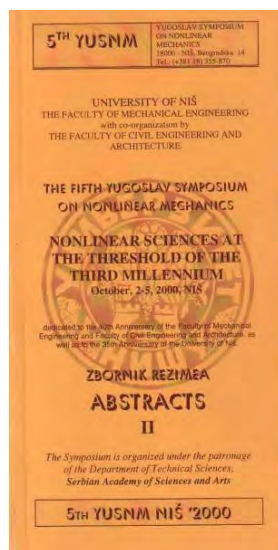
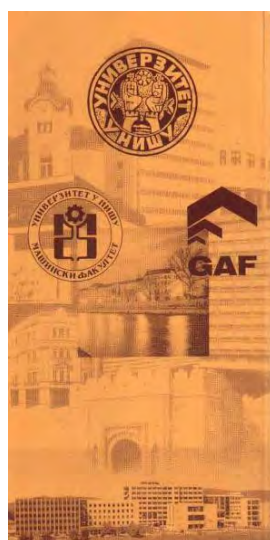
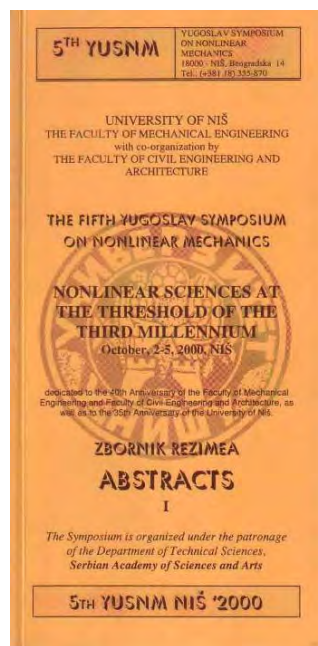
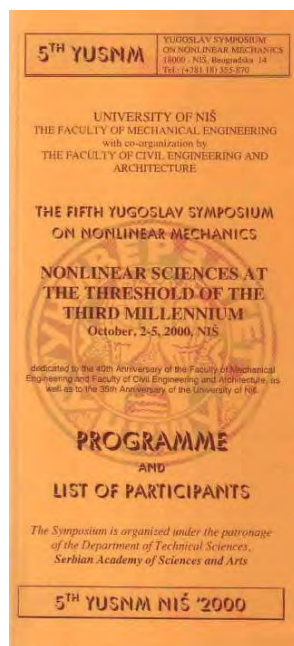
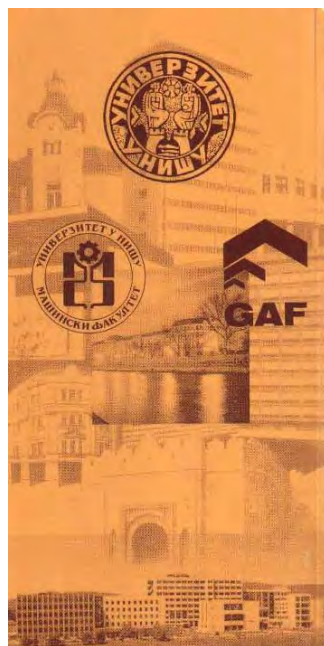
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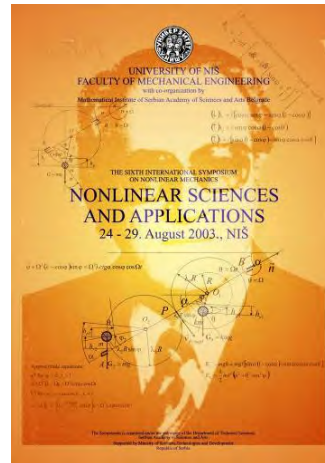
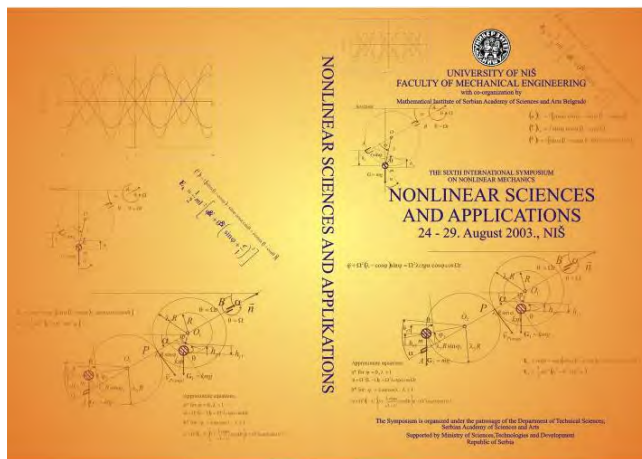


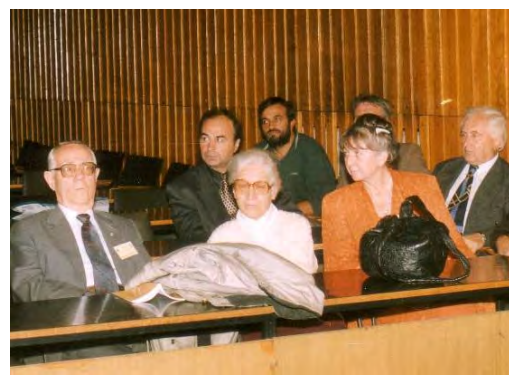
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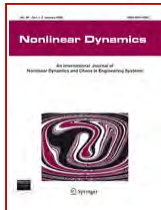




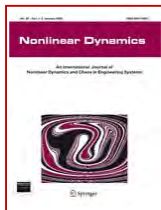


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Свідчення про внесення до Державного реєстру суб'єктів видавничої справи ДК №884 від 04.04.2002 р.

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Милутин Миланковић осунчан изложбом акад. Ђ. Злоковића и сећањима

акад. Т. Анђелића, М. Првановић и Б. Станковића, (Milutin Milanković in memory of Serbian academicians: Dj. Zloković, T.P. Andkelić, M. Prvanović and B. Stanković),

Галерија науке и технике САНУ, <http://m3.cpn.rs/program.php>

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суботом од 10 до 15 часова**

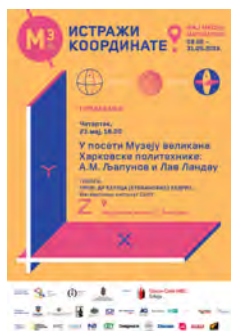
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18:00

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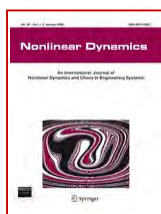


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У посети Музеју великана Харковске политехнике: А. М.
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<http://m3.cpn.rs/program.php>

List of the selected published scientific references 2018



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Scientific Lectures at Scientific Seminars

[Mathematical Institute of the Serbian Academy of Sciences and Arts](http://www.mi.sanu.ac.rs)

Seminar for History and Philosophy of Mathematics and Mechanics

UTORAK, 08.05.2018. u 12:15 sati

Katica (Stevanović) Hedrih, Matematički institut SANU, Beograd

PETROVIĆEVI PRONALASCI, PATENTI I DELA KAO IDEJNE PRETEČE I NADAHNUĆA ZA NOVE I SAVREMENE NAUČNE I TEHNOLOŠKE DOPRINOSE
http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar12.may2018.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar on Computer Science and Applied Mathematics

[UTORAK, 29.05.2018. u 14:15, Sala 301f, MI SANU, Kneza Mihaila 36](#)

Katica (Stevanović) Hedrih, Matematički institut SANU, Beograd

POGLED S DRUGE STRANE U DELA BARDA MATEMATIKE: PRONALASCI I PATENTI MIHAILA PETROVIĆA

http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar2.may2018.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar for History and Philosophy of Mathematics and Mechanics

UTORAK, 30.10.2018. u 12:15 sati

Katica (Stevanović) Hedrih, Matematički institut SANU, Beograd

PETROVIĆEVA TEORIJA „ELEMENTI MATEMATIČKE FENOMENOLOGIJE“ - NADAHNUĆE ZA NIZ MOJIH NAUČNIH DOPRINOSA

http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar12.oct2018.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar on Computer Science and Applied Mathematics

[UTORAK, 16.10.2018. u 14:15, Sala 301f, MI SANU, Kneza Mihaila 36](#)

Katica (Stevanović) Hedrih, Matematički institut SANU, Beograd

ROLLING HEAVY BALL OVER THE SPHERE AND ANALYSIS OF DYNAMICS OF VIBRO-IMPACT SYSTEMS WITH ROLLING BALLS OVER THE SPHERE

http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar2.oct2018.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar for History and Philosophy of Mathematics and Mechanics

UTORAK, 03.04.2018. u 12:15 sati

Katica (Stevanović) Hedrih, Matematički institut SANU, Beograd

FOTOELASTIČNOST VLATKA BRČIĆA

http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar12.apr2018.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Mechanics Colloquium

[SREDA, 07.11.2018 u 18:00, Sala 301f, MI SANU, Kneza Mihaila 36](#)

Katica (Stevanović) Hedrih, Matematički institut SANU

UBRZANJE DRUGOG REDA (TRZAJ) PRI OBRTANJU TELA OKO NEPOMIČNE TAČKE, *Povodom pola veka od publikovanja istoimenog rada*

http://www.mi.sanu.ac.rs/novi_sajt/colloquiums/programs/mechcoll.nov2018.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar for RELATIVITY THEORY AND COSMOLOGICAL MODELS

SREDA, 07.11.2018. u 11:00, Sala 301f, MI SANU, Kneza Mihaila 36

Katica (Stevanović) Hedrih, Matematički institut SANU

UBRZANJE DRUGOG REDA (TRZAJ) PLANETA

http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar19.nov2018.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar Mechanics of Machines and Mechanisms - Models and Mathematical Methods

UTORAK, 12.06.2018. u 17:00, Sala 301f, MI SANU, Kneza Mihaila 36

Katica (Stevanović) Hedrih, Mathematical Institute of SASA

PHASE TRAJECTORY METHOD AND TRIGGER OF COUPLED THREE SINGULAR POINTS IN INVESTIGATION OF DIFFERENT MODEL NONLINEAR DYNAMICS OF MULTI-STEP REDUCTOR/MULTIPLIER SYSTEMS

http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar21.jun2018.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar Mechanics of Machines and Mechanisms - Models and Mathematical Methods

UTORAK, 12.06.2018. u 17:00, Sala 301f, MI SANU, Kneza Mihaila 36

Katica (Stevanović) Hedrih, Mathematical Institute of SASA

PHASE TRAJECTORY METHOD AND TRIGGER OF COUPLED THREE SINGULAR POINTS IN INVESTIGATION OF DIFFERENT MODEL NONLINEAR DYNAMICS OF MULTI-STEP REDUCTOR/MULTIPLIER SYSTEMS

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[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar Mechanics of Machines and Mechanisms - Models and Mathematical Methods

UTORAK, 18.12.2018. u 17:00, Sala 301f, MI SANU, Kneza Mihaila 36

Katica (Stevanović) Hedrih, Mathematical Institute of SASA, Belgrade, Serbia

PRESENTATION OF THE RESEARCH RESULTS: PROJECT 174001 (2011-2018) DYNAMICS OF HYBRID SYSTEMS WITH COMPLEX STRUCTURES. MECHANICS OF MATERIALS.

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Научно друштво Србије и Задужбина Илије Коларца-ПРЕДАВАЊА

<http://www.kolarac.rs/>

predavanja@kolarac.rs<predavanja@kolarac.rs>;

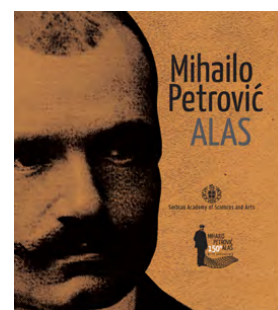
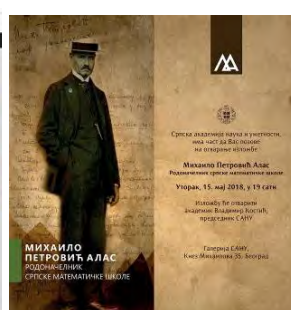
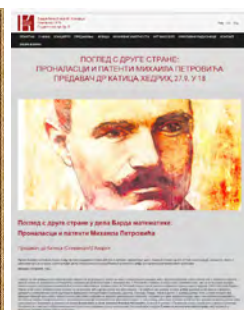
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Поглед с друге стране у дела Барда математике: Проналасци и патенти Михаила Петровића,

Задужбина Илије Коларца-ПРЕДАВАЊА

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МИХАИЛО ПЕТРОВИЋ АЛАС: РОДОНАЧЕЛНИК СРПСКЕ МАТЕМАТИЧКЕ ШКОЛЕ

17. мај, 13 сати , Галерија САНУ

Мултидимензионалност легата барда математике: феноменолошко пресликавање, проналасци и патенти Михаила Петровића

Проф. Катица Р. (Стевановић) Хедрих

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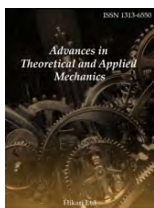
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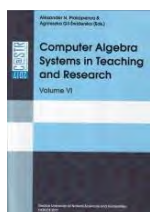
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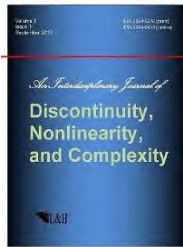
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MS-09 Nonlinear Dynamics in Engineering Systems (ENOC 2017)

Co-organizers:

Yuri Vladimirovich Mikhlin, *National Technical University "Kharkov Polytechnical Institute"*

Matthew Cartmell, *The University of Sheffield*

Konstantin Vitalievich Avramov, *NAS of Ukraine*

Hedrih (Stevanović) Katica , Energy method applied to the asymptotic methods of Non-linear mechanics, 343, Ibvited participant in MS-02 Asymptotic Methods, The 9th European Nonlinear Dynamics Conference (ENOC 2017) in Budapest, Hungary, 25-30 June, 2017 in the campus of Budapest University of Technology and Economics. www.congressline.hu/enoc2017/; [ID.343;](http://www.congressline.hu/enoc2017/abstracts/343.pdf) <http://www.congressline.hu/enoc2017/abstracts/343.pdf>; ISBN 978-963-12-9168-1.

MS-02 Asymptotic Methods (ENOC 2017)

Co-organizers:

Igor V. Andrianov, *Aachen University*

Jan Awrejcewicz, *University of Lodz*

Leonid I. Manevitch, *Russian Academy of Sciences*

Hedrih Andjelka and Hedrih (Stevanović) Katica, Analysis of oscillatory motions of chromosomes during anaphase using biomechanical oscillatory model of mitotic spindle, 372, MS-13 Nonlinear Dynamics in Biological Systems. **The 9th European Nonlinear Dynamics Conference (ENOC 2017) in Budapest, Hungary, 25-30 June, 2017 in the campus of Budapest University of Technology and Economics.** www.congressline.hu/enoc2017.ID.372, <http://congressline.hu/enoc2017/abstracts.php?page=10>, ISBN 978-963-12-9168-1

MS-13 Nonlinear Dynamics in Biological Systems

Co-organizers:

Gert van der Heijden, *University College, London*

Sachin Goyal, *University of California*

Gergely Röst, *University of Szeged*

Katica R. (Stevanović) Hedrih, EXTENDED CLASSICAL THEORY OF IMPACTS BY KINEMATICS AND DYNAMICS OF TWO ROLLING BODIES IN COLLISION, The 6th CONGRESS OF SERBIAN SOCIETY OF MECHANICS held at Tara Mountain, Hotel Omorika, June 19-21, 2017, Serbia

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Proceedings, The 6th International Congress of Serbian Society of Mechanics, Tara, June 19-21, 2017, Edited by: Mihailo Lazarević et al. Published by Serbian Society of Mechanics and Faculty of Mechanical Engineering, University of Belgrade, Belgrade. ISBN 978-86-909973-6-7. **128 str.**

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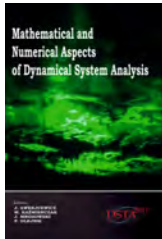
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Computer Algebra Systems in Teaching and Research
(CASTR'2017), Siedlce, Poland, October 18 – 22, 2017.
<http://www.castr.uph.edu.pl>

Invited organizers of Mini-symposium:
Pavel S. Krasilnikov (Moscow, Russia),
Katica R. (Stevanovic) Hedrih (Belgrade, Serbia),
Alexei A. Tikhonov (St. Petersburg, Russia)
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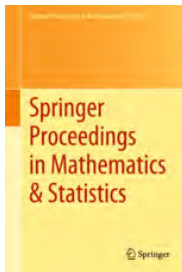
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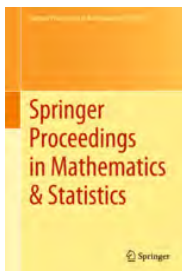
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Presentation of Special Issue of International Journal of Non-Linear Mechanics

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Elements of mathematical phenomenology and phenomenological mapping in non-linear dynamics

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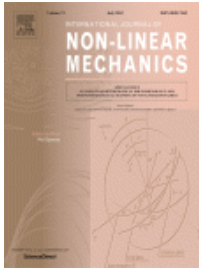
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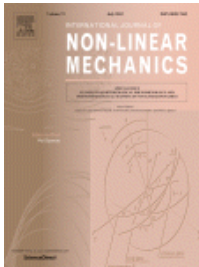
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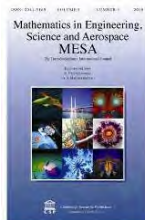
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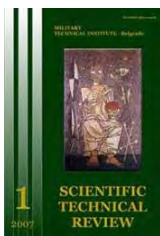
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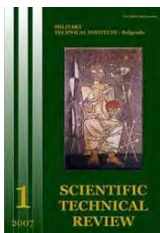
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Scientific and public lectures

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Seminar for the History and Philosophy of Mathematics, Mechanics and Astronomy

Utorak, 10. mart 2015. u 12:15 sati

Katica (Stevanović) Hedrih, Matematički institut SANU

FILOZOFIJA PRISTUPA ISTRAŽIVANJU DINAMIKE BILIJARA

http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar12.mar2015.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Mechanics Colloquium

Petak, 8. maj 2015. u 14 casova, sala 301f:

Zajednicka sednica Odeljenja za matematiku, Odeljenja za mehaniku, Odeljenja za racunarstvo i primenjenu matematiku i Seminara za istoriju i filozofiju matematike

Katica R. (Stevanovic) Hedrih, Matematički institut SANU

PETROVIC'S ELEMENTS OF MATHEMATICAL PHENOMENOLOGY AND
PHENOMENOLOGICAL MAPPINGS: THEORY AND APPLICATIONS

http://www.mi.sanu.ac.rs/novi_sajt/colloquiums/programs/mechcoll.may2015.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Mathematical Colloquium

Petak, 8.05.2015. u 14:00h, sala 301f, MI SANU

Katica R. (Stevanovic) Hedrih, Matematički institut SANU

PETROVIC'S ELEMENTS OF MATHEMATICAL PHENOMENOLOGY AND
PHENOMENOLOGICAL MAPPINGS: THEORY AND APPLICATIONS

http://www.mi.sanu.ac.rs/novi_sajt/colloquiums/programs/mathcoll.may2015.php

[Mathematical Institute of the Serbian Academy of Sciences and Arts](#)

Mechanics Colloquium

Sreda, 1. april 2015. u 18 casova, sala 301f:

Katica R. (Stevanovic) Hedrih, Matematički institut SANU

ELEMENTS OF GEOMETRY, KINEMATICS AND DYNAMICS OF BILLIARDS

http://www.mi.sanu.ac.rs/novi_sajt/colloquiums/programs/mechcoll.apr2015.php

M3

MAJ MESEC
MATEMATIKE

5. MAJ
5. JUN
2015.

РИТАМ МАТЕМАТИКЕ



Ослушани, Ритам математике прожима стварност.
Кроз глупи космички вакуум, кроз ледено тиху, безумну празнину
протиче звезда која ће, пратећи наукомљиви математички ритам
галаксије, током маја месеца превалети 670.819.639 км Млечног
пута. За исто време једна од њених планета, на математичкој елипси
око звезде, током маја ће описати криву дугу 80.498.355 км.

Окупана у пулсовима Сунчевог ветра, планета живи и овог маја,
осцилује у математичком ритму. Древни ветрови неумољиво следе
математичке једначине, узбуњавају милионе тона ваздуха. Буџ
окава у ритму математичких криваља запљускује милијарде
створења. Ритмови универзалних сила сливају се у велику песну
живота, бескрајно вредносно звукова које испуњава сваку пору и
осцилује без прекида. На другој страни, читавих 47.526.300.500 км
далеко, у спором такту пулсира и надалеко изасланик овог света,
мала метална сонда Војажер.

Ослушани, Ритам математике спаја просторе и времена, континенте
и цивилизације.

У освит веровске културе, три миленијума далеко у прошлост,
дружина опскурних питагорејаца у ритму открива магију
математике. Вођа мистичне секте, мудрац са Самоса, Питагора,
у звуковима и музици залажа прве људима знање двојструкости,
тројструкости, четворострукости. Порађају се бројеви. Ничу скале.
Простор математике се попуњава магичним објектима. На њима
расте свеукупно људско знање.

Ослушани мај,

Центар за промоцију науке и Математички институт SANU, од
5. маја до 5. јуна 2015. по четврти пут организују националну
манifestацију Мај месец математике (M3), овог пролећа на тему
„Ритам математике“. Придружи се великој мелодији четвртог M3, који
се одвија у највише просторе до сада – обиђи галерије, тргове, сале
за предавања. Услучи се.

M3 се чије широм Београда и Србије, из недеље у недељу отвара нове
интерактивне изложбе, нова узбуђења, нова знања. У ритму који
прожима свет. Ритму математике.

www.m3.rs

УТОРАК, 12. МАЈ

18-19.15 часова

(Галерија науке и технике SANU)

Отварање изложбе „Бројеви“

Говоре: др Зорана Курбалија

Новичић, ЦПН, академик Зоран

Петровић, Галерија науке и технике

SANU, др Зоран Огњановић, МИ SANU

18-19.15 часова

(Мала сала, Коларац)

„Поглед у савремена научна

достигнућа Петровићевом

теоријом елемената математичке

феноменологије“

проф. др Катица Стевановић

Хедрих, Машински факултет, Ниш

УТОРАК, 12. МАЈ

18-19.15 часова

(Галерија науке и технике SANU)

Отварање изложбе „Бројеви“

Говоре: др Зорана Курбалија

Новичић, ЦПН, академик Зоран

Петровић, Галерија науке и технике

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18-19.15 часова

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„Поглед у савремена научна

достигнућа Петровићевом

теоријом елемената математичке

феноменологије“

проф. др Катица Стевановић

Хедрих, МИ SANU

Maj mesec matematike 2015, уторак 12 мај 2015 у 16 часова, мала сала Коларац.
 Pogled u savremena naucna dostignuca Petrovicevom teorijom elemenata matematicke fenomenologije.
 Katica (Stevanovic) Hedrih,
 clan Naucnog drustva Srbije I akademik Akademije nauka visokih skola I univerziteta Ukrajine,
 rukovodilac projekta ON174001 iz mehanike

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 North Atlantic University Union



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Receipt code: I-04, Receipt date: December 16, 2013, Author: Katica R. (Stevanovic) HEDRIH, Paper category: OH-paper. ISSN 0040-3604



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Receipt code: No. 315-131216, Receipt date: December 16, 2013

Author: Katica R. (Stevanovic) HEDRIH, Paper category: OH-Paper.
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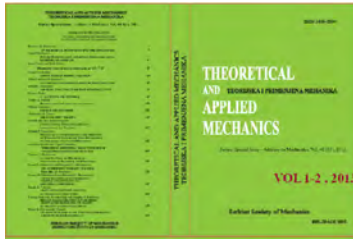
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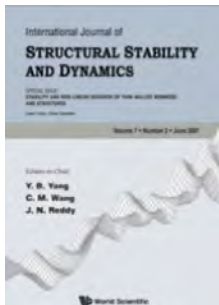
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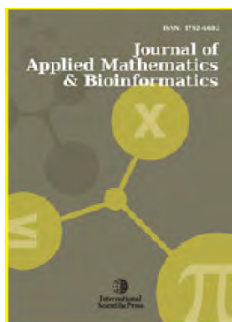


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* 12TH CONFERENCE on DYNAMICAL SYSTEMS THEORY AND APPLICATIONS, December 2-5, 2013. Łódź, Poland. www.wydawnictwa.p.lodz.pl, <http://www.dys-ta.com/>

* **Fourth Serbian Congress of Theoretical and Applied Mechanics**
(<http://www.ssm.org.rs/Congress2013/authors.html>)

* **Mini Symposium Nonlinear Dynamics – Milutin Milankovic**
Interdisciplinary and multidisciplinary sciences
4th -7th of June 2013, Hotel BREZA- Vrnjačka Banja, Serbia
Organizer: Katica R. (Stevanovic) Hedrih
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* 8th INTERNATIONAL SYMPOSIUM ON CLASSICAL AND CELESTIAL MECHANICS (CCMECH'8), September 25 – 29, 2013, Siedlce, Poland, (The Russian Academy of Sciences, A. A. Dorodnicyn Computing Centre of RAS, Moscow State University, Moscow State Aviation Institute, Warsaw University of Life Sciences, and Collegium Mazovia in Siedlce (Poland) will hold the Eighth International Symposium on Classical and Celestial Mechanics (CCMECH'2013) at Collegium Mazovia in Siedlce, Poland).

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Hedrih (Stevanović) K., (2013), Generalized function of fractional order dissipation of system energy and extended Lagrange differential equation in matrix form, *Dedicated to 86th Anniversary of Radu MIRON'S Birth*. 30 minutes Plenary Lecture, Abstracts of THE 13TH INTERNATIONAL CONFERENCE OF TENSOR SOCIETY ON DIFFERENTIAL GEOMETRY AND ITS APPLICATIONS, AND INFORMATICS BESIDES., *The 86th Anniversary of Radu MIRON'S Birth*. September 3rd (Tuesday) to September 7th (Saturday) in 2013. Faculty of Mathematics, Alexandru Ioan Cuza University and Mathematical Institute "O.Mayer" in Iași Romania And Tensor Society, Japan, 2013, p.3. (paper submitted for publishing in the journal Tensor of Tensor Society, Japan.)

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YU ISSN 0350-2910

New Series

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Проф. Др Катица (Стевановић) Хедрих, Математички институт САНУ

ЗАКОНИ, ПРИНЦИПИ И ТЕОРЕМЕ ДИНАМИКЕ. ФИЗИЧКИ И МАТЕМАТИЧКИ ОСНОВИ

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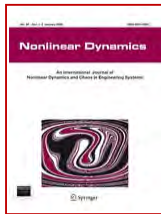
Prof. Dr Katica (Stevanović) Hedrih, Matematički institut SANU

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List of the selected published scientific references

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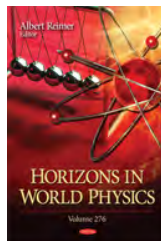


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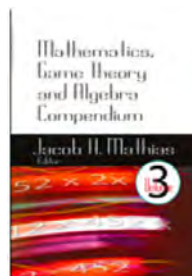


(Secind published in book) **Chapter 5**

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Math.Subj.Class.: 70-02; 70E55; 70F40; 70G10; 70G45; 70J50; 70K50; 70K28; ISSN 1450-5584.

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October 5, 2012 at 12,00h-12,40h, Plenary Lecture

Chairs: H. Yabuno, Pavel Krasilnikov and Marina V. Shitikova

PL-13. ID-81. PHENOMENOLOGICAL MAPPING AND MATHEMATICAL ANALOGY IN NONLINEAR DYNAMICAL SYSTEMS, K. (Stevanović) Hedrih^{1, 1} Mathematical Institute SANU, Department of Mechanics, and Faculty of Mechanical Engineering University of Niš, Serbia,

Прво једноауторско саопштење сам представила сама:

October 4, 2012 at 13,40h-15,00h, Contributed Lectures

CL-36. ID-80. STOCHASTIC PARAMETRICALLY EXCITED HEREDITARY SANDWICH MULTI BEAM DYNAMICAL SYSTEMS, K. (Stevanović) Hedrih¹ Mathematical Institute SANU, Department of Mechanics, and Faculty of Mechanical Engineering University of Niš, Serbia.

Док је коауторско саопштење под називом:

CL-37. ID-79. HYBRID SYSTEM DYNAMICS ON LAYER WITH NONLINEAR ELASTIC AND INERTIA PROPERTIES, K. (Stevanović) Hedrih¹, **M. Stamenković**², **N. Nešić**^{2, 1} Mathematical Institute SANU, Department of Mechanics, and Faculty of Mechanical Engineering University of Niš, Serbia,² Mathematical Institute SANU, Department of Mechanics, Kneza Mihaila 36/III, Serbia,

успешно саопштла деуги коаутор **Марија Stamenković**.

Двостранични апстракти радова су публиковани у публикацији Симпозијума и преглед са одговарајућим библиографским падацима је дат у следећем приказу истих:

Hedrih (Stevanović) K., (2012), PHENOMENOLOGICAL MAPPING AND MATHEMATICAL ANALOGY IN NONLINEAR DYNAMICAL SYSTEMS, **Plenary Lecture**, Booklet of Abstracts of Symposium Nonlinear Dynamics – Milutin Milanković, Multidisciplinary and Interdisciplinary Applications (SNDMIA 2012), Belgrade, October 1-5, 2012. (Eighth Serbian Symposium in area of Non-linear Sciences), Editors: Katica R. (Stevanović) HEDRIH andf Žarko Mijajlović, Serbian Scientific Society, 2012, pp. 38-39. (<http://afrodita.rcub.bg.ac.rs/~nds/indexe.html>)

Hedrih (Stevanović) K. SYMPOSIUMS ON NONLINEAR MECHANICS IN SERBIA, ICNO AND ENOC, Address to Participant of Symposium, Booklet of Abstracts of Symposium Nonlinear

Dynamics – Milutin Milanković, Multidisciplinary and Interdisciplinary Applications (SNDMIA 2012), Belgrade, October 1-5, 2012. (Eighth Serbian Symposium in area of Non-linear Sciences), Editors: Katica R. (Stevanović) HEDRIH and Žarko Mijajlović, Serbian Scientific Society, 2012, pp. 172-178. (<http://afrodita.rcub.bg.ac.rs/~nds/indexe.html>)

Hedrih (Stevanović) K., (2012), STOCHASTIC PARAMETRICALLY EXCITED HEREDITARY SANDWICH MULTI BEAM DYNAMICAL SYSTEMS, Contributed Lecture, Booklet of Abstracts of Symposium Nonlinear Dynamics – Milutin Milanković, Multidisciplinary and Interdisciplinary Applications (SNDMIA 2012), Belgrade, October 1-5, 2012. (Eighth Serbian Symposium in area of Non-linear Sciences), Editors: Katica R. (Stevanović) HEDRIH and Žarko Mijajlović, Serbian Scientific Society, 2012, pp. 137-138..

(<http://afrodita.rcub.bg.ac.rs/~nds/indexe.html>)

K. (Stevanović) Hedrih, M. Stamenković, N. Nešić (2012), HYBRID SYSTEM DYNAMICS ON LAYER WITH NONLINEAR ELASTIC AND INERTIA PROPERTIES, Contributed Lecture, Booklet of Abstracts of Symposium Nonlinear Dynamics – Milutin Milanković, Multidisciplinary and Interdisciplinary Applications (SNDMIA 2012), Belgrade, October 1-5, 2012. (Eighth Serbian Symposium in area of Non-linear Sciences), Editors: Katica R. (Stevanović) HEDRIH and Žarko Mijajlović, Serbian Scientific Society, 2012, pp. 139-140. (<http://afrodita.rcub.bg.ac.rs/~nds/indexe.html>)

Била сам модератор Округлог стола на тему Етика научника, који се одржао веома успешно по оцени и домаћих и иностраних учесника.

October 4, 2012 at 13,00h-13,40h, Round Table

Invitation for Chairs and Contribution Discussions: Albert Luo, Hiroshi Yabuno, Pavel Krasilnikov, Mihai Zavrlevski, Marina V. Shitikova, Ljiljana Kolar Anić, Slobodan Anić, Jelko Upić, Žarko Mijajlović, K. (Stevanović) Hedrih i drugi.

Round Table: "Ethic of Scientists and Evaluation of Scientific Research Results".

October 5, 2012 at 12,00h-12,40h, Plenary Lecture

Chairs: H. Yabuno, Pavel Krasilnikov and Marina V. Shitikova

PL-13. ID-81. PHENOMENOLOGICAL MAPPING AND MATHEMATICAL ANALOGY IN NONLINEAR DYNAMICAL SYSTEMS, K. (Stevanović) Hedrih^{1,1} Mathematical Institute SANU, Department of Mechanics, and Faculty of Mechanical Engineering University of Niš, Serbia,

Booklet of Abstracts - **Symposium Nonlinear Dynamics – Milutin Milanković**, Multidisciplinary and Interdisciplinary Applications, (SNDMIA 2012), Belgrade, October 1-5, 2012., (Eighth Serbian Symposium in area of Non-linear Sciences), Serbian Scientific Society. Str. 38-39.

<http://afrodita.rcub.bg.ac.rs/~nds/indexe.html>, ISBN 978-86-7746-344-1, COBISS.SR – ID 193221132, Barcode

http://www.mi.sanu.ac.rs/projects/booklet_of_abstracts.pdf

ISBN 978-86-7746-344-1 COBISS.SR – ID 193221132

i Barcode sa brojem 978-86-7746-344-1:



Scientific and Public Lectures

Циклус предавања Одељења природно-математичких наука Научног друштва Србије

НАУЧНИ ХОРИЗОНТИ ПРИРОДНОМАТЕМАТИЧКЕ НАУКЕ - ЈУЧЕ, ДАНАС И СУТРА

Предавање под насловом: Хедрих (Стевановић) К., (2012), О ТАНГЕНТНИМ ПРОСТОРИМА ВЕКТОРА ПОЛОЖАЈА МАТЕРИЈАЛНИХ ТАЧАКА РЕОНОМНОГ СИСТЕМА И ЊИХОВИМ КИНЕТИЧКИМ ДЕФОРМАЦИЈАМА, предавање, **НАУЧНИ ХОРИЗОНТИ - ПРИРОДНОМАТЕМАТИЧКЕ НАУКЕ - ЈУЧЕ, ДАНАС И СУТРА**, Циклус предавања Одељења природно-математичких наука Научног друштва Србије, Понедељак, 30. април 2012. године. <http://afrodita.rcub.bg.ac.rs/~nds/indexe.html>

Семинари Математичког института САНУ Семинар механике Одељења за механику Математичког института САНУ

<http://www.mi.sanu.ac.rs/seminars/seminar12.htm>
<http://www.mi.sanu.ac.rs/colloquiums/mechcoll.htm>

SREDA, 11. april 2012. u 18 sati:

Проф. др Катица Р. (Стевановић) Хедрих, руководилац пројекта ОИ 174001 и управник Одељења за механику

Предавање под насловом: Хедрих (Стевановић) К., (2012), Вектори момената маса, вектори ротатори и њихова примена на системе више спрегнутих тела који изводе спрегнуте ротације, предавање, „Семинар механике Одељења за механику Математичког института САНУ, среда 11 април 2012 у 18 часва (замена предавања због одсутности предавача, који није најавио спреченост да одржи предавање, види Записник Семинара механике Одељења за механику) .

<http://www.mi.sanu.ac.rs/colloquiums/mechcoll.htm>

Предавање одржано на основу садржаја и резултата из публикованих радова:

Hedrih (Stevanović K., (2012), Mass moment vectors and vector rotators and their applications to the rigid body multi-coupled rotations, (realized as Plenary Lecture, Certificate), Selected papers, CCMECH-7, 7th INTERNATIONAL SYMPOSIUM ON CLASSICAL AND CELESTIAL MECHANICS (CCMECH'2011), October 23 – 28, 2011, Edited by Leszek Gadowski, Pavel Krasilnikov and Alexander Prokopenya. The Russian Academy of Sciences, A. A. Dorodnicyn Computing Centre of RAS, Moscow State University, Moscow State Aviation Institute, and Collegium Mazovia in Siedlce (Poland), pp. 44-62. ISBN 978-83-63169-20-6.

Hedrih (Stevanović) Katica, (2012 ili 13), Vector method based on mass moment vectors and vector rotators applied to rigid-body multi-coupled rotations around no intersecting axes, invited and accepted by guset Editor Jan Awrejcevicz and submitted for possible publishing in specual Issue of International Journal of Structural Stability and Dynamic, (wait Editorial drcision of Editor in Chief of Journasl). ISSN 0219-4554

Sreda, 09. maj 2012. u 18 sati:

***Проф. др Катица Р. (Стевановић) Хедрих, Математички институт САНУ Београд и
Машишки факултет Универзитета у Нишу (Пројекат ON174001)***

Предавање под насловом: Хедрих (Стевановић) К., (2012), Линеаризације и апроксимације са применама у механици: Методе, претпоставке, прве аналитичке апроксимације и грешке (Linearizations and approximations with applications in mechanics: Methods, assumptions, first analytic approximations and errors), предавање, Семинар механике Одељења за механику Математичког института САНУ, среда 9 маја 2012 у 18 часва (замена предавања због одсутности предавача, који је најавио спреченост да одржи предавање, види Записник Семинара механике Одељења за механику) . <http://www.mi.sanu.ac.rs/colloquiums/mechcoll.htm>

Семинари Математичког института САНУ Семинар за филозофију и историју математике, механике и астрономје

<http://www.mi.sanu.ac.rs/seminars/seminar12.htm>

UTORAK, 22. maj 2012. u 12:15 sati

***Prof. Dr Katica R. (Stevanović) Hedrih, matematički institut SANU, Beograd*
**FASCINANTNA NELINEARNA DINAMIKA TEŠKE MATERIJALNE TAČKE;
APSTRAKCIJA REALNIH SISTEMA I OŽIVLJAVANJE MATEMATIKE****

Предавање под насловом: Хедрих (Стевановић) К., (2012), FASCINANTNA NELINEARNA DINAMIKA TEŠKE MATERIJALNE TAČKE; APSTRAKCIJA REALNIH SISTEMA I OŽIVLJAVANJE MATEMATIKE, предавање, Семинар за филозофију и историју математике, механике и астрономје, Математичког института САНУ, уторак, 22 мај 2012 у 12 часва.
<http://www.mi.sanu.ac.rs/seminars/programs/seminar12.maj2012.htm>

Predavanje povodom 15 godina članstva u akademiji nauka visokih škola i univerziteta ukraine (od 1996)

UTORAK, 23. oktobar 2012. u 12:15 sati

***Katica R. (Stevanovic) Hedrih, Matematički institut SANU, Beograd*
JUBILEJ "OPŠTE TEORIJE STABILNOSTI" A. M. LJAPUNOVA**

Предавање под насловом: Хедрих (Стевановић) К., (2012), JUBILEJ "OPŠTE TEORIJE STABILNOSTI" A. M. LJAPUNOVA, предавање, Семинар за филозофију и историју математике, механике и астрономје, Математичког института САНУ, уторак, 23 октобра 2012 у 12 часва.
<http://www.mi.sanu.ac.rs/seminars/programs/seminar12.oct2012.htm>

Семинари Математичког института САНУ Семинар Математичке методе механике

<http://www.mi.sanu.ac.rs/mmm/>

Предавање под насловом: Хедрих (Стевановић) К., (2012), О ТАНГЕНТНИМ ПРОСТОРИМА ВЕКТОРА ПОЛОЖАЈА МАТЕРИЈАЛНИХ ТАЧАКА РЕОНОМНОГ СИСТЕМА И ЊИХОВИМ КИНЕТИЧКИМ ДЕФОРМАЦИЈАМА, предавање, Семинар Математичке методе механике,

Математички институт САНУ, Понедељак, 30. април 2012. године.
<http://www.mi.sanu.ac.rs/mmm/srpski/indexs.html>

Семинари Математичког института САНУ Семинар "Математичке методе механике у примени".

Mathematical Methods of Mechanics and Applications and Project OI 174001

Matematicke metode mehanike u primeni

Projekat OI 174001 Dinamika hibridnih sistema slozenih struktura (2011-2014)

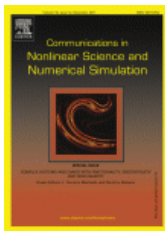
Seriya predavanja za istrazivace pripravnike i doktorante iz oblasti Kinetike, Elastodinamike, Analiticke mehanike, Primene tenzorskog racuna u mehanici, Teorije oscilacija i Nelinearne dinamike

Одржаван сваке среде у току 2011 и 2012 године.

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Хедрих (Стевановић) К., (2011 и 2012), Seriya predavanja za istrazivace pripravnike i doktorante iz oblasti Kinetike, Elastodinamike, Analiticke mehanike, Primene tenzorskog racuna u mehanici, Teorije oscilacija i Nelinearne dinamike, Одржаван сваке среде у току 2011 и 2012 године и одржано више од 25'0 часова предавања докторских курсева и консултација са истраживачима са пројекта ОИ174001. Предавач ниједан час није наплатио, а предавања је одржао са поседбним надањућем и радошћу преношења знања на младе истраживаче.. <http://www.mi.sanu.ac.rs/colloquiums/program.htm>

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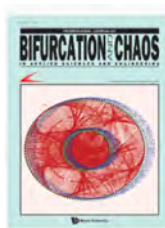
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World Academy of Science, Engineering and Technology

Volume 73, January 2011, Pages 352-358



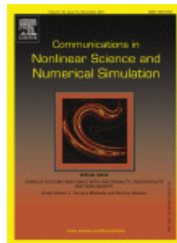
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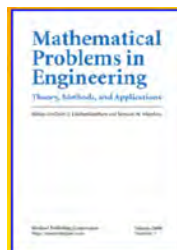
Hedrih (Stevanović) K R., Raičević V. and Jović S., Phase Trajectory Portrait of the Vibro-impact Forced Dynamics of Two Heavy Mass Particles Motions along Rough Circle, *Communications in Nonlinear Science and Numerical Simulations*, 2011 16 (12):4745-4755, Pages 4745-4755. ISSN 1007-5704. DOI 10.1016/j.cnsns.2011.05.027, [Volume 16, Issue 12](http://www.sciencedirect.com/science/article/pii/S1007570411002735), December 2011, SI:Complex Systems and Chaos with Fractionality, Discontinuity, and Nonlinearity

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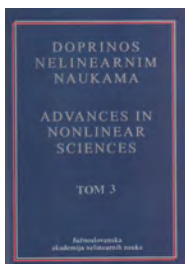
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Katica R. (Stevanović) Hedrih, (2011), Angular velocities of the basic vectors of the position vectors of a rheonomic system and tangent space extension, **(Plenary Lecture)**, Book of Abstracts, CCMECH-7, 7th INTERNATIONAL SYMPOSIUM ON CLASSICAL AND CELESTIAL MECHANICS (CCMECH'2011), October 23 – 28, 2011, The Russian Academy of Sciences, A. A. Dorodnicyn Computing Centre of RAS, Moscow State University, Moscow State Aviation Institute, and Collegium Mazovia in Siedlce (Poland) pp. 35-39. ISBN 978-83-63169-08-4.

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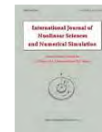


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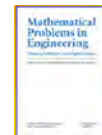
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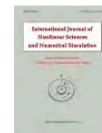
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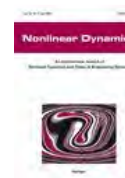


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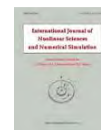
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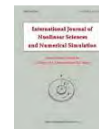


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U okviru **IUTAM ICTAM** Adelaide 2008, *Katica R. (Stevanović) Hedrih* održala je "Session Lecture" u trajanju od 20 minuta uključujući i diskusiju, u okviru sekcije Oscilacije struktura - SM19 :: Structural vibrations, kojom su predsedavali Co-chairs: *Marian Wiercigroch* (UK) and *Pedro Ribeiro* (Portugal).

Kategorizacija učešća u ICTAM sa orlnim kratkim predavanjem može se smatrati velikim priznanjem naučne rezultate, posebno, kada istražrač dolazi iz male zemlje, koja nije velesila u nauci, kakva je Srbije.

Naziv predavanja je:

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Hedrih (Stevanović) K. and Simonović, J., (2006), *Characteristic Eigen Numbers and Frequencies of the Transversal Vibrations of Sandwich System*, SEECCM 06 –First South-East European Conference on Computational Mechanics, Proceedings, Editors – M. Kojic and M Papadrakakis, Kragujevac, pp. 90-94. + CD. <http://www.seeccn.kg.ac.yu>. ISBN 86-81037-13-7, COBISS.SR-ID 131758092, udc 531/533(082)

Hedrih (Stevanović) K.: *Multifrequency forced vibrations of thin elastic shells*. In: CD Proc. of the Fifth EUROMECH Nonlinear Dynamics Conference, pp. 2417-2426. Eindhoven University of Technology (2005)

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Katica R. (Stevanović) Hedrih, DYNAMICS OF SANDWICH STRUCTURES (DINAMIKA SENDVIČ STRUKTURA), Invited Plenary Lecture, Medjunarodne konferencije Savremeni problemi u građevinarstvu - Current Problems in Civil Engineering, Građevinski fakultet u Subotici, Univerziteta u Novom Sadu, 2 i 3. jun 2006. Abstracts and CD Full paper.

2005.

Katica (Stevanović) Hedrih, *Transversal vibrations of the axially moving sandwich belts*, Invited Lecture – 40 minutes, ISRAMES December 2-4, 2005. Kalyani, West Bengal, India. The International Symposium on "Recent Advances in Mathematical Sciences and Earth Sciences" 2nd to 4th December 2005. Department of Mathematics, University of Kalyani.

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VII* Plenarna prefavanja ili predavanja po pozivu na naucnim skupovima štampani u apstraktu ili u celini
(Plenary Lecture, Invited Lecture or Keynote Lecture presented at scientific meetings and published as Abstract of paper or full paper)

2010.

Hedrih (Stevanović) K., (2010), Discontinuity of kinetic parameter properties in nonlinear dynamics of mechanical systems, **Keynote Invited Lecture**, 9th Brazilian Conference on Dynamics, Control and Their Applications - 9º Congresso Temático de Dinâmica, Controle e Aplicações, June 07-11, 2010. UneSP, Sao Paulo (Serra negra), Brazil, Technical Program and Booklet of Abstracts, DINCON 2010, FUNUNeSP, Chair: pp. 14, Abstrac pp. 26
<http://www.rc.unesp.br/igce/demac/dincon2010/instrucao.php>

2009.

9th International Symposium Ukrainian Mechanical Engineers Lvov 2009 – ISUMEL 2009



Član Naučnog odbora i učesnik sa plenarnim predavanjem.

Održana predavanja

Invited Plenary Lecture (45 minuta)- plenarno predavanje po pozivu u "Aktavom zalu" Lvovske politehnike.

Katica (Stevanović) HEDRIH, (2009), Main chains and eigen modes of the hybrid homogeneous fractional order multichain system, Invited Plenary Lecture (45 minuta), Proceedings of 9th International Symposium Ukrainian Mechanical Engineers Lvov 2009 – ISUMEL 2009, Ministarstvo obrazovanja i nauke Ukraine, Lvov Polztechnique, Naukoviz žurnal "Mashonoznanstvo", ISBN 078-966-06-8, pp. 6-8.

Minisymposium Keynote Lecture:

Katica (Stevanović) Hedrih, Free and forced vibration of the heavy material particle along line with friction: Direct and inverse task of the theory of vibrorheology, 7th EUROMECH Solid Mechanics Conference, J. Ambrósio et.al. (eds.), Lisbon, Portugal, September 7-11, 2009, ESMC 2009 Book of Abstracts 'Mini'Symposia, izdanje Instituto Superior Tecnico, Lisbon, APMTAC, 2009, pp. 597-598, ISBN 9789899 626423

Katica (Stevanović) Hedrih, Free and forced vibration of the heavy material particle along line with friction: Direct and inverse task of the theory of vibrorheology, Booklet of Abstracts - ESMC Lisbon 2009, Minisymposium Keynote Lecture, Minisymposium MS-24-Kinetics, Control and Vibrorheology - KINCONVIB – 2009, Faculty of Mechanical Engineering University of Niš, pp. 51-52.

ISBN 978-86-80587-94-3 COBISS.SR – ID 169182988 BarCod 9-788680-58794-3

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Katica (Stevanović) HEDRIH, (2208), 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, 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.

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Hedrih (Stevanović), K., *Hybrid System Dynamics*, Proceedings, Invited Lecture, First International Congress of Serbian Society of Mechanics, Editors: D. Šumarac and D. Kuzmanović, Srpsko društvo za mehaniku, 10-13, April, 2007, pp. 79-84.
<http://www.ssm.org.yu/congress2007/authors.html>

Goroško O. A. and Hedrih (Stevanović) K., Advances in development of the analytical dynamics of the hereditary discrete systems, Key Note Lecture, Minisymposium, Booklet of Abstracts - IDND 2007 – Analytical Dynamics of Discrete Hereditary System, Shanghai 2007, pp. 27-34.

Goroshko O.A. and Hedrih (Stevanović), K., (2007), Construction of the Lagrange mechanics of the hereditary systems, Minisymposium Opening Minisymposia Lecture of the International Summer School APM – Advanced Problem in Mechanics- Integrity of Dynamical Systems, Saint Petersburg 2007., in Booklet of Abstracts - IDND 2007 – Analytical Dynamics of Discrete Hereditary System, Shanghai 2007, pp. 63-84.

Hedrih (Stevanović), K., (2007), *Tensor equations of the dynamics of the discrete systems with hereditary and creep light elements*, Conference on Differential Geometry, Lagrange and Hamilton Spaces. Dedicated to Acad. Radu Miron at his 80th anniversary, 2007, A.I.Cuya, University, Faculty of Mathematics, Iasi, Romania.. Book of Abstracts, pp. 18-22.

Hedrih (Stevanović), K., Hybrid System Dynamics, Proceedings, First International Congress of Serbian Society of Mechanics, Editors: D. Šumarac and D. Kuzmanović, Srpsko društvo za mehaniku, 10-13, April, 2007, pp. 79-84.

Hedrih (Stevanović), K., (2007), *Energy Transfer in Hybrid System Dynamics*, Invited Participation, 6th Recent German-Greek-Polish Symposium, Recent Advances in Mechanics, September 17-21 2007, Alexandroupolis, Greece, Book of Abstracts, pp. 7-8.

2006.

Hedrih (Stevanović), K. (2006), DYNAMICS OF THE AXIALLY MOVING SANDWICH MULTI BELT SYSTEM, International Conference "Actual Problems of Applied Mathematics and Mechanics", devoted 80-anniversary from birthday Ac. Rvachev V.L., on October 23-26, 2006 in Kharkov., Član naučnog odbora konferencije i sa radom.

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Katica R. (Stevanović) Hedrih, DYNAMICS OF SANDWICH STRUCTURES (DINAMIKA SENDVIČ STRUKTURA), Invited Plenary Lecture, Međunarodne konferencije Savremeni problemi u građevinarstvu - Current Problems in Civil Engineering, Građevinski fakultet u Subotici, Univerziteta u Novom Sadu, 2 i 3. jun 2006. Abstracts and CD Full paper.

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Katica R. (Stevanović) Hedrih, *Theoretical and Applied Mechanics of the Rigid and Solid Bodies. Mechanics of Materials (2006-2010) (Teorijska i primenjena mehanika krutih i čvrstih tela. Mehanika materijala.), savremeni problemi, prikaz rezultata projekta ON144002 i Matematički institut SANU, Jubilarni seminar - "60 godina Matematičkog instituta SANU" a 30-to minutno predavanje po pozivu, publikovan Apstrakt.*

2005.

Katica (Stevanović) Hedrih, *Transversal vibrations of the axially moving sandwich belts, Invited Lecture – 40 minutes, ISRAMES December 2-4, 2005. Kalyani, West Bengal, India. The International Symposium on "Recent Advances in Mathematical Sciences and Earth Sciences" 2nd to 4th December 2005. Department of Mathematics, University of Kalyani.*

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VIII* Član naučnog odbora internacionalnih acaunih skupova ili organizatoor minisimpozijuma
(Member of Scientific Committee of interantional scientific meetings and organizer of Minisymposia included in the Program of interantional scientific meetings)

2010.

* M11-Minisymposia Kinetics, Control and Vibrorheology at ICDVC-2010- The Third International Conference on Dynamics, Vibration and Control, 12-14 May 2010, Hangzhou,, China, Chinese Society of Theoretical and Applied Mechanics, 2010. <http://saa.zju.edu.cn/icdvc2010/>

Član Naučnog odbora i organizator Minisimpozijuma

Member of Scientific Committee of interantional scientific meeting and organizer of Minisymposia included in the Program.

*The 3rd INTERNATIONAL CONFERENCE "NONLINEAR DYNAMICS - 2010", at the NATIONAL TECHNICAL UNIVERSITY, "KHARKOV POLYTECHNICAL INSTITUTE", KHARKOV, UKRAINE, the 3rd ND-KhPI 2010 , the Nonlinear Dynamics Conference, from 21 until 24 September, 2010

Član Naučnog odbora.

Member of Scientific Committee of interantional scientific meeting.

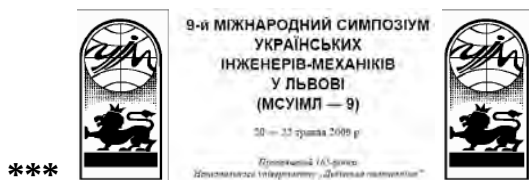
* "3rd Conference on Nonlinear Science and Complexity" (NSC10), Cankaya University, Ankara, Turkey in the period of 26 - 29 July, 2010.

<http://nsc10.cankaya.edu.tr/index.php>

Član Naučnog odbora.

Member of Scientific Committee of interantional scientific meeting.

2009.



9th International Symposium Ukrainian Mechanical Engineers Lvov 2009 – ISUMEL 2009, Ministarstvo obrazovanja i nauke Ukraine, Lvov Polztechnique, Naukoviz žurnal "Mashonoznanstvo", ISBN 078-966-06-8.

Član Naučnog odbora i učesnik sa plenarnim predavanjem.

Member of Scientific Committee of interantional scientific meeting and Plenary Lecturer.

*10th Conference on Dynamical Systems – Theory and Applications, Proceedings, DSTA Lodz 2009, Lodz, December 7-10, 2009, Poland, Department for Automatic and Biomechanics, Lodz, (see Proceedings - ISBN 978-83-929120-4-0, Vol. I and II).

Član Naučnog odbora.

Member of Scientific Committee of interantional scientific meeting.

* Minisymposium MS-24-Kinetics, Control and Vibrorheology - KINCONVIB - 2009, European Society of Mechanics, Instituto Superior Tecnico - Lisbon and Mechanical Engineering Faculty in Niš - Project ON144002 - Seminar Nonlinear Dynamics - Milutin Milanković and MATHEMATICAL INSTITUTE SANU, Project ON144002, 2009.

ISBN 978-86-80587-94-3 **COBISS.SR – ID 169182988** **BarCod 9-788680-58794-3**

Organizator minisimpozijuma.

Organizer of Minisymposia included in the Program.

2008.

*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.

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Member of Scientific Committee of international scientific meeting and Invited Lecture-Key note Lecture.

2007.

* **APM Saint Petersburg 2007** pp., Minisymposium, The International Summer School APM – Advanced Problem in Mechanics, Saint Petersburg 2007., pp. 133-156.

APM 2007 – *Minisymposium Integrity of Dynamical Systems – organized by Katica (Stevanović) Hedrih, Summer School. APM 2007 Advanced Problems in Mechanics, Russia, St. Petersburg June 20 - 28, 2007. Institute for Problems in Mechanical Engineering of the Russian Academy of Sciences, Izdavač Mašinski fakultet u Nišu, p. 379. ISBN 86-80587-67-2 COD 9 7886 80587677, BarCod 9 7886 80587677*

ISBN 86-80587-67-2 COD 9 7886 80587677, BarCod 9 7886 80587677

Organizator minisimpozijuma po pozivu.

Invited organizer of Minisymposia included in the Program.

* First International Congress of Serbian Society of Mechanics, Editors: D. Šumarac and D. Kuzmanović, Srpsko društvo za mehaniku, 10-13, April, 2007, pp. 79-84.
<http://www.ssm.org.yu/congress2007/authors.html>

Član Naučnog odbora i plenarno predavanje po pozivu.

Member of Scientific Committee of international scientific meeting and Invited Lecture-Key note Lecture.

* IDND 2007 – *Analytical Dynamics of Discrete Hereditary Systems – Organized by Katica (Stevanović) Hedrih, Izdavač Mašinski fakultet u Nišu* zam - Minisymposia - Analytical mechanics of the hereditary discrete systems

Second International Symposium on Nonlinear Dynamics, 27-30 Oct., 2007, Shanghai, Donhua University, China, p.198. ISBN 978 – 86 – 80587 – 72 – 1 COBISS.SR – ID 144265740. BarCod 9 788680 56772 1
<http://www.2007isnd.com/>

ISBN 978 – 86 – 80587 – 72 – 1 COBISS.SR – ID 144265740. BarCod 9 788680 56772 1

Organizator minisimpozijuma po pozivu.

Invited organizer of Minisymposia included in the Program.

* *Minisymposium - Integrity of Dynamical Systems- ECF16, Organized by Katica (Stevanović) Hedrih, invited organizer of Minisymposia IDS-ECF - the 16th European Conference of Fracture, Greece 2006, Centre for Nonlinear Dynamics and Active Structures, Faculty of Mechanical Engineering University of Niš and Democritus University of Thrace, Xanthi, Greece, 2006. p. 324. ISBN 86-80587-57-5. BarCod 9 788680 587578. COBIS. SR - ID 130756620. UDK 531:01 /048); 530:182(048); 530:42 (048); 53:005.745 (100).*

ISBN 86-80587-57-5.

BarCod 9 788680 587578. COBIS. SR - ID 130756620

Organizator minisimpozijuma po pozivu.

Invited organizer of Minisymposia included in the Program.

2006.

Hedrih (Stevanović), K. (2006), DYNAMICS OF THE AXIALLY MOVING SANDWICH MULTI BELT SYSTEM, International Conference "Actual Problems of Applied Mathematics and Mechanics", devoted 80-anniversary from birthday Ac. Rvachev V.L., on October 23-26, 2006 in Kharkov.,

Član Naučnog odbora.
Member of Scientific Committee of international scientific meeting.

2005.

Katica (Stevanović) Hedrih, *Transversal vibrations of the axially moving sandwich belts*, Invited Lecture – 40 minutes, *ISRAMES December 2-4, 2005, Kalyani, West Bengal, India. The International Symposium on "Recent Advances in Mathematical Sciences and Earth Sciences" 2nd to 4th December 2005. Department of Mathematics, University of Kalyani.*

Član Naučnog odbora.
Member of Scientific Committee of international scientific meeting.

Katica (Stevanović) Hedrih: *Measurements of dynamical systems integrity and fracture mechanics, Invited plenary lecture, ISUMEL 2005 Lviv, Ukraine, 7-й МІЖНАРОДНИЙ СІМПОЗІУМ УКРАЇНСЬКИХ ІНЖЕНЕРІВ-МЕХАНІКІВ У ЛЬВОВІ*, (МСУІМЛ — 7), 18 — 20 травня 2005 р., Присвячений 160-річчю Національного університету „Львівська політехніка”

Član Naučnog odbora.
Member of Scientific Committee of international scientific meeting.

IX. Učešće u vodećem naučnom kongresu IUTAM ICTAM u oblasti teorijske i primenjene mehanike u svetu (period 2005-2010) Participation in the IUTAM ICTAM (period 2005-2010)

Kongres Internacionalne unije teorijske i primenjene mehanike **IUTAM ICTAM** se održava jednom u četiri godina i selekcija radova je veoma stroga. Oko 50% se odbija, a mali broj dobije priliku da usmeno predstavi svoje rezultate, u većini su to poster sa 3 minuta prikaza.

U okviru **IUTAM ICTAM** Adelaide 2008, Katica R. (Stevanović) Hedrih održala je “**Session Lecture**” u trajanju od 20 minuta uključujući i diskusiju, u okviru sekcije Oscilacije struktura - **SM19 :: Structural vibrations**, kojom su predsedavali Co-chairs: *Marian Wiercigroch* (UK) and *Pedro Ribeiro* (Portugal).

Kategorizacija učešća u ICTAM sa orlnim kratkim predavanjem može se smatrati velikim priznanjem naučne rezultate, posebno, kada istražач dolazi iz male zemlje, koja nije velesila u nauci, kakva je Srbije.
Naziv 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).

X* U okviru projekta ON144002 radi seminar Nonlinear Dynamics - Milutin Milankovic na Mašinskom fakultetu. Vidi seriju publikaciju: Booklet of Abstracts - Minisymposium and WEB <http://www.mi.sanu.ac.rs/seminars/seminar16.htm>

XI* Rukovodilac projekata u periodu 2000-2010:
Project Leader Katica (Stevanović) Hedrih in period 2000-2010

*** ON1616 Realni problemi mehanike (2001-2005)**

*** ON1616 Real Problem of Mechanics (2001-2005)**

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

Project Leader: *Katica (Stevanović) Hedrih*

Researchers: **41.**

Researcher months: *approximately 98 months.*

Deo doktorske teze uradio Ljubiša Perić a radion na doktorskoj tezi mr Dragan Jovanović.

*** ON1828 Dinamika i upravljanje aktivnih konstrukcija (2001-2005)**

*** ON1828 Dynamics and Control of active Structures (2001-2005)**

Institution Coordinator: *Faculty of Mechanical Engineering University of Niš*

Project Leader: *Katica (Stevanović) Hedrih*

Researchers: **21**

Researcher months: *approximately months.*

Deo doktorske teze **uradio Ljubiša Perić** a doktorsku tezu radio mr Dragan Jovanović.

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

*** Project ON144002 -Theoretical and Applied Mechanics of the Rigid and Solid Bodies.**

Mechanics of Materials (2006-2010)

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.*

U okviru istraživanja na projektu doktorsku disertaciju završ i odbranio mr Dragan Jovanović.

Magistarske teze uradili i odbranili Julijana Simonović i Srdjan Jović. Sada rade istraživanja za izradu doktorata mr Julijana Simonović, mr Ljiljana Veljović i mr Srdjan Jović (mentor prof dr Vladimir Raičević).

XIII* Mentor odbranjenih doktorskih disertacija i magistarskih teza u periodu 2005-2010.

Mentor doktorske disertacije dr Dragan Jovanović:

Jovanović D., (2009), Potencijalna energija i stanje napona u materijalu sa prslinom, (Potential energy and stress state in material with crack) , Doktorska disertacija, (odbrana 10 novembra 1009), Mašinski fakultet u Nišu, str.237.

Mentor magistarske teze Mr Julijane Simonovic

Simonović J., (2008), Dinamika mehaničkih sistema složenih struktura, magistarski rad odbranjen 8 maj 2008. Mašinski fakultet u Nišu, str. 249.

Seriya konsultacije u izradi magistarske teze istraživaču na projektu ON144002 mr Srdjanu Joviću:

Јовић С., (2009). Енергијска анализа динамике виброударних система, магистарски рад, одбрањен 06. Новембра 2009. Факултет техничких наука у Косовској Митровици Универзитета у Приштини, стр. 239.

u saradnji sa mentorom magistarske teze **prof dr Vladimirom Raičevićem,**

XIVI* Članstvo u redakcijama časopisa, uredništvima, naučnim društvima

Editorial of Journals:

1* Editor in Chief of the Following Journals:

Facta Universitatis (1990-2001) with 13 Series .

<http://facta.junis.ni.ac.rs/>

Facta Universitatis Series Mechanics, Automatic Control and Robotics, University of Niš (1991- 2008)

<http://facta.junis.ni.ac.rs/macar/macar.html>

ISSN 0354 – 2009

IF =0,371

2* Associate Editor (2004-)

Mathematical Problems in Engineering, Hindawi Publishing Corp. <http://www.hindawi.com/>

(<http://www.hindawi.com/journals/mpe/aip.972873.html>)

<http://www.hindawi.com/journals/mpe/aip.6.html>

<http://www.hindawi.com/journals/mpe/editors.html>

<http://www.hindawi.com/13168039.html>

ISSN 1024-123x

IF =0.553

3* Member of Editorial Board of the Following Journals:

International Journal of Nonlinear Sciences and Numerical Simulations, ©Freund Publishing House Ltd., (2000-)

<http://www.cs.uky.edu/~jzhang/nsns.html>

<http://www.ijnsns.com/>

http://www.freundpublishing.com/International_Journal_Nonlinear_Sciences_Numerical%20Simulation/Math.htm

ISSN 1565-1339

M21=8

IF= 8.479

Scientific Technical Review, Vojske Srbije, (2005-) YU ISSN 1820-0206

<http://www.vti.mod.gov.yu/ntp/index.htm>

YU ISSN 1820-0206

IF =0,040

Journal of the Serbian Society for Computational Mechanics (2006-)

www.sscm.kg.ac.rs/jsscm/

4* Referee of Following Journals and Information Data-Base:

Archive of Applied Mechanics - Manuscript Central Account Info (SY-23)-Springer, (4 recenzije samo u 2006)

Nonlinear Dynamics, Springer više recenzija

Workshop Preprints/Proceedings No 2006-2 IFAC workshop on Fractional Differentiation and its Applications FDA 06, Porto (desetak recenzija)

The European Union Control Association (32 recenzija u 2006)

ESIS European Conference of fracture 2006 (31 recenziju u 2006)

Zentralblatt für Mathematik und ihre Grenzgebiete Berlin (desetak recenzija u 2006)

Facta Universitatis Series Mechanics, Automatic Control and Robotics, University of Niš (1990-)

Mathematical Problems in Engineering, Hindawi Publishing Corp. <http://www.hindawi.com/>

Neurosciences letters, Elsevier, Journal of Sound and Vibrations, Elsevier,

European Polymer Journal, Elsevier,

FME Transaction, Faculty of Mechanical Engineering University of Belgrade,

Material Letters, Elsevier,

Journal Nonlinear Analysis - Theory, Methods and Applications, Series B: Real-world Applications, Pergamon Press,

Signal Processing, Elsevier,

Journal of Porous Materials, Springer

ENOC 2005, EuroMech

Journal of Nonlinear Mechanics

Nonlinear Dynamics

and other.

XV* Članstvo u akademijama nauka i naučnim društvima u kojima se obavlja izbor članova tajnim glasanje na osnovu naučnih rezultata

Member of Academy of Sciences and Scientific Societies with elections on the basis of scientific results:

*** Ukrainian Higher school and University Academy of Sciences - Akademija nauka visokih skola i univerziteta Ukrajinie (od 1996-)**

АКАДЕМІЯ НАУК ВИЩОЇ ШКОЛИ УКРАЇНИ (АН ВШ України)



www.anvsu.org.ua

* **Ukrainian Higher Education Academy of Sciences - Akademija nauka visokih skola i univerziteta Ukrajine (od 1996-)**

Академії наук вищої освіти України

<http://anvou.org.ua/news/akademia-nauk-visoi-osviti-ukraini-ogolosue-konkurs-na-zdobutta-nagorod-svatogo-vołodimira-i-arosla/>



АКАДЕМІЯ НАУК ВИЩОЇ ОСВІТИ УКРАЇНИ

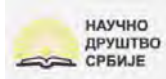
LABORE ET SCIENTIA

* **Naučno društvo Srbije - Serbian Scientific Society (2008-)**



<http://afrodita.rcub.bg.ac.rs/~nds/>

<http://afrodita.rcub.bg.ac.rs/~nds/indexe.htm>



<http://nds.edu.rs/clanstvo-naucno-drustvo-srbije/>

* **Akademija nelinearnih nauka – Academy of Nonlinear Sciences - Moscow (1997-)**

* **Južnoslovenska akademija nelinearnih nauka u Srbiji JANN - SouthSlavian Academy of Nonlinear Sciences – SANS Belgrade (1997-)**

<http://www.masfak.ni.ac.rs/sitegenius/topic.php?id=786>

* **Naučni sekretar JANN – Scientific Secretary of SANS (1998-20010)**

* **Interbationa American Society of Mechanical Engineeris (Int. ASME)**



* **EuroMech – European Society of Mechanics**



- * GANN (from 1972)
- * Rebsir Society (Japan, from 1992)
- * Yugoslav Society of Mechanics and Serbian SoMechanics (from 1972 and other)

XVI* Member of Professional-Scientific Societies:

American Academy of Mechanics AAM
 Member of GAMM – Germany (since 1972)
 Member of Tensor Society - Japan
 Member of International ASME – International American Society of Mechanical Engineers USA (od 2000 -)
 Member of European Society for Mechanics – EuroMech
 Member of M.C.Chaki Centre for Mathematics and Mathematical Sciences – Calcutta, India
 Member of SSM-JDM
 Member of Serbian Society of Computational Mechanics

www.sscm.kg.ac.rs/jsscm/

Member of Society of Nonlinear dynamics in Human Factors – Adelaide , Australia.

XVII* Citati (Subject: Citation) (2005-2010)

Najmanje dvadesetak citata, u periodu 2006-2010, u časopisima sa ISI liste, a više od 150 u radovima publikovanim u domaćim časopisima i doktoraskim i magistarskim disertacijama autora iz Srbije.

* Citati u časopisima sa ISI liste (izbor)

Na primer:

* Hedrih (Stevanović) K., Filipovski A., (2002), *Longitudinal Vibration of a Fractional Derivative Order Rheological Rod with Variable Cross Section*, Facta Universitatis, Series Mechanics, Automatic Control and Robotics, Vol. 3 No. 12, 2002. pp.327-350. YU ISSN 0534-2009.
<http://facta.junis.ni.ac.yu/facta/macar/macar2002/macar2002-02.html>

* Cited (quoted) in:

Jakšić N., Boltežar M., (2005), Viscously damped transverse vibrations of a moving string, Journal of Mechanical Engineering – Strojniški vestnik, vol.51. No.9/05 Issue 485, pp. 560-569. ISSN 0039-2480.. **ISI List**

Hedrih (Stevanović) K.: Interpretation of the transfer of energy from high-frequency to low-frequency modes by averaging asymptotic method Krilov-Bogolybov-Mitropolsky. In.: Proc. of the Second International Conference “Asymptotics in Mechanics”, pp. 97-104. Saint-Petersburg State Marine Technological University, Saint-Petersburg (1997)

Hedrih (Stevanović) K.: Multifrequency forced vibrations of thin elastic shells. In: CD Proc. of the Fifth EUROMECH Nonlinear Dynamics Conference, pp. 2417-2426. Eindhoven University of Technology (2005)

Cited (quoted) in:

Kozmin A., Mikhlin Yu. and C. Pierre, Transient in a two DOF nonlinear Systems, Nonlinear Dynamics, 2006; Nonlinear Dynamics, Volume 51, Numbers 1-2 / January, 2008 , DOI: 10.1007/s11071-007-9198-1

- * Citati na moje radove nalaze se i u sledećim publikovanim radovima:

Q. Li and Y. H. Chen, Why traction-free? Piezoelectric crack and Coulombic traction, Journal Article, *Archive of Applied Mechanics*, Volume 78, Number 7 / July, 2008 DOI: 10.1007/s00419-007-0180-7

Pei-Wei Zhang, Zhen-Gong Zhou and Lin-Zhi Wu, Coupled field state around three parallel non-symmetric cracks in a piezoelectric/piezomagnetic material plane, Journal Article. *Archive of Applied Mechanics*, Volume 79, Number 10 / October, 2009, DOI: 10.1007/s00419-008-0270-1

Yufeng Xing and Bo Liu, Closed form solutions for free vibrations of rectangular Mindlin plates, Journal Article, *Acta Mechanica Sinica*, Volume 25, Number 5 / October, 2009, DOI: 10.1007/s10409-009-0253-7

Yufeng Xing and Bo Liu, New exact solutions for free vibrations of rectangular thin plates by symplectic dual method, Journal Article, *Acta Mechanica Sinica*, Volume 25, Number 2 / April, 2009, DOI: 10.1007/s10409-008-0208-4
Journal Article

Q. Li and Y. H. Chen, Why traction-free? Piezoelectric crack and Coulombic traction, *Archive of Applied Mechanics*, Volume 78, Number 7 / July, 2008, DOI: 10.1007/s00419-007-0180-7

*** Citati u delima domaćih autora:**

Veliki broj citata u sledećim disertacijama:

Jovanović D., (2009), *Potencijalna energija i stanje napona u materijalu sa prslinom*, (*Potential energy and stress state in material with crack*), (odbrana 10 novembra 1009), Doktorska disertacija, Mašinski fakultet u Nišu, str.237.

Simonović J., (2008), *Dinamika mehaničkih sistema složenih struktura*, magistarski rad odbranjen 8 maj 2008. Mašinski fakultet u Nišu, str. 249.

Јовић С., (2009). *Енергијска анализа динамике виброударних система*, магистарски рад, одбрањен 06. Новембра 2009. Факултет техничких наука у Косовској Митровици Универзитета у Приштини, стр. 239.

Mirko Blagojević (2008), *Naponsko i deformaciono stanje elemenata cikloreduktora pri dinamičkom opterećenju*, Mašinski fakultet u Kragujevcu, str.224..

*** Jedan broj citata na moje radove se može naći u radovima publikovanim u sledećim časopisima:**

* Scientific Technical Review, Vojske Srbije, (2005-) YU ISSN 1820-0206
<http://www.vti.mod.gov.yu/ntp/index.htm>
YU ISSN 1820-0206 IF =0,040

* *Facta Universitatis Series Mechanics, Automatic Control and Robotics*, University of Niš (1991- 2008). <http://facta.junis.ni.ac.rs/macar/macar.html>
ISSN 0354 – 2009 IF =0,371

* FME Transactions - Scientific Journal published by Faculty of Mechanical Engineering. Faculty of Mechanical Engineering, University of Belgrade
<http://www.mas.bg.ac.rs/transactions/index.html>
YU ISSN 1451-2092

XVIII* Nagrade i priznanja u periodu 2005-2010

Medallion (Plague) "Archimed" and Charter 2007 of Scientific-Technical Institute of Serbian Army for scientific work.

Medallion (Plague) and Charter 2008 of Cankaya University, Ankara, Turkey for Scientific advances in IFAC FDA Workshop.

XIX* Recenzije za inostrane fondacije i ministarstva nauke (Referee for aboard foundation of sciences and Ministry of Sciences other countries)

Recenzija sdržaja projekta registrovanog pod oznakom:

Project proposal No. 101/09/1481 submitted in the current round of GA CR Call for Proposals.

iz osnovnih nauka na poziv Češke fondacije za nauku (CSF - GACR - application for 2009 - 101/09/1481, Subject: CSF - Czech Science Foundation, "CSF - Czech Science Foundation"

<info@gacr.cas.cz>) prema pozivu d 3 jula 2008 godine.

U potpisu poyiva je:

Hana Jirmanova

Head of Department of Technical Sciences

Email: hana.jirmanova@gacr.cas.cz

On behalf of the **Czech Science Foundation (GA CR)**, the major funding body in the Czech Republic that supports all scientific areas of basic research including the international projects, to ask you whether you would be prepared to evaluate a project proposal No. 101/09/1481 submitted in the current round of GA CR Call for Proposals.

XX* Predavanja na sminarima u Matematičkom institutu SANU u periodu 2005-2010.

1* Mechanics Colloquium - Odelenje za mehaniku Matematickog institute SANU

SREDA, 17. mart 2010. u 18 sati:

Katica (Stevanovic) Hedrih, Matematicki institut SANU Beograd

TRIGGER OF COUPLED SINGULARITIES IN NONLINEAR DYNAMICS OF A HEAVY MASS PARTICLE ALONG ROTATE ROUGH CIRCLE

SREDA, 14. oktobar 2009. u 18 sati:

Katica R. (Stevanovic) Hedrih, Masinski fakultet, Nis

VISIBILITY OF NONLINEARITY

UTORAK, 14. oktobar 2008. u 14 sati:

Prof. Katica (Stevanovic) Hedrih, Mašinski fakultet Niš

PHENOMENOLOGICAL MAPPING METHOD AND MATHEMATICAL ANALOGY OF HYBRID SYSTEM DYNAMICS

SREDA, 5. decembar 2007. u 18 sati:

Katica (Stevanovic) Hedrih, Mašinski fakultet, Niš

PREDSTAVLJANJE REZULTATA PROJEKTA ON 144002

Projekt ON144002 Teorijska i primenjena mehanika krutih i cvrstih tela. Mehanika materijala. (2006-2010)

SREDA, 17. oktobar 2007. u 18 sati:

Katica (Stevanovic) Hedrih, Masinski fakultet, Nis

Pojmovi nelinearne dinamike i Aleksandr Mikhailovich Lyapunov (1857 ~V 1918) A.M.Lyapunov

SREDA, 16. maj 2007. u 18 sati:

Katica (Stevanovic') Hedrih, Ma~Zinski fakultet, Ni~Z

Novi prikazi klasicne dinamike rotora (ili Novi pogled u Kinetiku rotora)

SREDA, 17. maj 2006. u 18 sati:

Katica (Stevanovic') Hedrih, Julijana D. Simonovic (Masinski fakultet, Nis)

SLOBODNE TRANSVERZALNE OSCILACIJE ELASTICNO SPREGNUTIH KRUNIH PLO?A

SREDA, 12. april 2006. u 18 sati:

K. S. Hedrih

Transversal vibrations of the axially moving sandwich band and string (Transverzalne oscilacije aksijalno pokretne sendvic trake i strune)

SREDA, 01. mart 2006. u 18 sati:

Katica (Stevanovic') Hedrih

Nelinearna dinamika - Interdisciplinarni pristup

SREDA, 26. oktobar 2005. u 18 sati:

Katica (Stevanovic') Hedrih

Transversal Vibration of a Parametrically Excited Beam: Influence of Rotatory Inertia and Transverse Shear on Stochastic Stability of Deformable Forms and Processes

SREDA, 21. septembar 2005. u 18 sati:

Katica (Stevanovic') Hedrih

Dostignuća Nelinearne dinamike

SREDA, 08. jun 2005. u 18 sati:

Katica Stevanovic-Hedrih,

Memorijalno predavanje povodom 20. godina od smrti [prof. Danila Raskovica](#)

Prof. dr ing dipl. math. Danilo P. Raskovic (1910-1985), upravnik Odeljenja za mehaniku Matematickog instituta SANU u 1962. godini.

SREDA, 25. maj 2005.:

16:00-16:40, Katica Stevanovic-Hedrih,

Mere integriteta dinamičkih sistema.

SREDA, 02. mart 2005. u 18 sati:

Katica Stevanovic Hedrih

VIŠEFREKVENTNE NELINEARNE OSCILACIJE TANKE ELASTICNE LJUSKE SA POZITIVNOM GAUSS-OVOM KRIVINOM I KONACNIM DEFORMACIJAMA

(Predavanje je posveceno secanju na profesora dr Ing. dipl. Math. Danila P. Raskovica (10. septembar 1910-29. januar 1985), jednog od Upravnika Odeljenja za mehaniku Matematickog instituta SANU (1962), a povodom 20. godina od smrti.)

SREDA, 01. decembar 2004. u 18 sati:

Katica Stevanovic Hedrih, Spasoje Gadzic

O JEDNOM MODELU DINAMIKE KRUTIH TELA VELIKIH BRZINA

2* Seminar Nonlinear dynamics - Milutin Milankovic - Project ON144002

Cetvrtak, 8. oktobar 2009. u 11,00 h na Masinskom fakultetu u Nisu, u svecanoj sali 401.

Katica R. (Stevanovic) Hedrih

Vibrations, Energy and Powers of Force Works of a Material Particle Motion along Rough Line with Friction of Coulomb Type

Cetvrtak, 15. oktobar 2009. u 11,00 h na Masinskom fakultetu u Nisu, u svecanoj sali 401.

Katica R. (Stevanovic) Hedrih

Vibro-impact system dynamics: Heavy material particle oscillations along rough circle with radial two side impact limiter of the elongations

Cetvrtak, 22. oktobar 2009. u 11,00 h na Masinskom fakultetu u Nisu, u svecanoj sali 401.

Katica R. (Stevanovic) Hedrih

Considering Transfer of Signals through Hybrid Fractional Order Homogeneous Structure

Cetvrtak, 29. oktobar 2009 u 11,00 h na Masinskom fakultetu u Nisu, u svecanoj sali 401.

Katica R. (Stevanovic) Hedrih

Optimal Control in Engineering systems with trigger of coupled singularities

Četvrtak, 12. februar 2009. u 12,00 h na Mašinskom fakultetu u Nišu, u Laboratoriji L 307.

Katica R. (Stevanović) Hedrih

„Beseda o MEHANICI, mojim profesorima, kolegama i studentima“

Nastavak besede i diskusija.

Četvrtak, 5. februar 2009. u 12,00 h na Mašinskom fakultetu u Nišu, u Laboratoriji L 307.

Katica R. (Stevanovic) Hedrih

„Beseda o MEHANICI, mojim profesorima, kolegama i studentima“

(„Onn Mechanics, as well as on my Professors, Colleagues and Students“)

povodom 445 godina od rođenja Galileo Galilei (15 February 1564 – 8 January 1642) i 130 godina od rođenja Milutina Milankovića (1879 - 1958), posvećeno profesorima Draginji Nikolić, Danilu Raskoviću, Tatomiru Andjeliću i Yuriju Mitropoljskom.

Sreda, 3. decembar 2008. u 18,00 h

Katica R. (Stevanović) Hedrih

MAIN CHAINS AND EIGEN MODES OF THE FRACTIONAL ORDER HYBRID MULTI PENDULUM SYSTEM DYNAMICS

ČETVRTAK, 6. DECEMBRA 2007. godine sa početkom u 11,00 časova

Katica (Stevanović) Hedrih

Mehanika krutog tela i Leonhard EULER

Rigid body dynamics and Leonhard Euler (1707-1783)

ČETVRTAK, 5. APRILA 2007. godine sa početkom u 13,00 časova

Katica (Stevanović) Hedrih

Hibridni sistemi i hibridne dinamike: Teorija i primene

Hybrid Systems and Hybrid Dynamics: Theory and Applications

3* Seminar for Geometry, education and visualization with applications

ČETVRTAK, 06.05.2010. u 17 sati, sala 301f, MI

Katica Stevanovic Hedrih

Vektori poloza materijalnih tacaka reononnog sistema i njihovi tangentni triedri i N-jedri vektorskih baza u razlicitim sistemima krivolinijskih koordinata

ČETVRTAK, 12.11.2009. u 17 h Matematicki fakultet u Beogradu

Katica (Stevanović) Hedrih

Coriolis-ova sila inercije u dinamici mehanickog sistema i transformacije koordinata iz Descartes-ovog u generalisani sistem ortogonalnih krivolinijskih koordinata

(predavanje je posveceno akademiku Milevi Prvanovic, povodom 80-tog rodjendana)

4* Seminar for the History and Philosophy of Mathematics and Mechanics

UTORAK, 06. april 2010. u 12:15 sati

Prof. Dr Katica R. Stevanovic-Hedrih, Matematički institut SANU, Beograd

KOORDINATNI SISTEMI I KOORDINATE VEKTORA I SILE INERCIJE

UTORAK, 16. mart 2010. u 12:15 sati

Prof. Dr Katica R. Stevanović-Hedrih, Matematički institut SANU, Beograd

POVODOM: VEKTOR, ŠTA JE TO?

UTORAK, 20. oktobar 2009. u 12:15 sati

Prof. Dr Katica Stevanović-Hedrih, Mašinski fakultet, Univerzitet u Nišu

FORMALIZAM TRANSFORMACIJE KOORDINATA, DINAMIČKI (MEHANIČKI) SISTEMI I SILE INERCIJE

UTORAK, 18. novembar 2008. u 12:15 sati

Prof. dr Katica Stevanović-Hedrih, Mašinski fakultet, Univerzitet u Nišu

MEHANIKA KRUTOG TELA I LEONARD OJLER

UTORAK, 24. mart 2009. u 12:15 sati

Prof. Dr Katica Stevanović-Hedrih, Mašinski fakultet, Univerzitet u Nišu

GALILEO GALILEI I KINETIKA

5* Seminar on Applied Mathematics

Utorak, 24.11.2009. u 14:15, sala 301f, MI SANU:

Katica R. (Stevanović) Hedrih

THE OPTIMAL CONTROL IN ENGINEERING NONLINEAR SYSTEMS WITH TRIGGER OF COUPLED SINGULARITIES

Utorak, 17.02.2009. u 14:15, sala 305, MIBG:

Katica (Stevanović) Hedrih, Mašinski fakultet, Niš

MAIN CHAINS AND EIGEN MODES OF THE FRACTIONAL ORDER HYBRID SYSTEM VIBRATIONS

XX* Gostovanje na nasim seminarima inostranih profesora po pozivu na inicijativu K. Hedrih u periodu 2006-2010.:

March 28, 2009 at 11,30h

Valery V. Kozlov, Real member and vice-president of Russian Academy of Science, Steklov Mathematical Institute RAS, Moscow, Russia

Opening Lecture Seminar Nonlinear Dynamics – Milutin Milankovic

В.В. Козлов: СПЕКТРАЛЬНЫЕ СВОЙСТВА КОНЕЧНОМЕРНЫХ ОПЕРАТОРОВ И ЗАДАЧА О ГИРОСКОПИЧЕСКОЙ СТАБИЛИЗАЦИИ

Valery V. Kozlov: Spektralna svojstva konačnodimenzionalnih operatora i zadatak giroskopske stabilizacije

SREDA, 11. novembar 2009. u 18 sati:

E.E. Gdoutos, Office of Theoretical and Applied Mechanics of the Academy of Athens School of Engineering, Democritus University of Thrace, GR-671 00 Xanthi, Greece E-mail: egdoutos@civil.duth.gr

FAILURE MECHANISMS OF COMPOSITE SANDWICH STRUCTURES

SREDA, 7. maj 2008. u 18 sati:

Prof. Giuseppe Rega, Dipartimento di Ingegneria Strutturale e Geotecnica, Sapienza Università di Roma

CONTROL OF BIFURCATION, CHAOS AND BASIN INTEGRITY: THEORETICAL ISSUES AND APPLICATION

PETAK, 23. NOVIMBRA 2007. godine sa početkom u 11.00 časova

Academician **Radu Miron**, Faculty of Mathematics, University "Al.I.Cuza" Iasi, Iasi, Romania
UNIVERSITATEA „ALEXANDRU IOAN CUZA”, FACULTATEA DE MATEMATICĂ
Bulevardul Carol I, nr. 11 / 700506 – Iași, R O M Â N I A, E-mail: radu.miron@uaic.ro
održaće predavanje pod nazivom

Lagrangian and Finslerian Mechanics of Nonconservative Mechanical Systems

U PETAK, 23. NOVIMBRA 2007. godine sa početkom u 12.00 časova

Camellia Frigioiu, University "Dunarea de Jos", Department of Mathematics
Str. Domneasca nr 47, Galati - 800008, ROMANIA, Camelia.Frigioiu@ugal.ro

The Dynamical Systems of Rheonomic Finslerian Mechanical Systems

U UTORAK, 12. DECEMBRA 2006. godine sa početkom u 14.00 časova

Alexander P. Seyranian D.Sc, Ph.D, Leading Research Fellow, Institute of Mechanics,
Moscow State Lomonosov University, održaće predavanje pod nazivom

MULTIPARAMETER STABILITY THEORY WITH MECHANICAL APPLICATIONS

U CETVRTAK, 1. JUNA 2006. godine sa pocetkom u 12,00 casova

J.T. Katsikadelis, Academy of Athens, Office of Theoretical and Applied Mechanics & School of Civil Engineering, National Technical University of Athens, Greece.

The BEM for Nonlinear Vibrations of Plates with Variable Stiffness and Mass Properties

ON174001 - Dynamics of hybrid systems with complex structures. Mechanics of materials. (2011-2014)

ON174001 – Dinamika hibridnih sistema složenih struktura. Mehanika materijala . (2011-2014)

Support: Ministry of Education, Sciences and Technology of Republic of Serbia

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

Project Leader: Katica (Stevanović) Hedrih

Researchers: 38.







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paper. When the discontinuity is small, it can be taken as an interface crack between the bi-materials or two bodies (plates or beams). By com...

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Transversal vibrations of the axially moving sandwich belts

Hedrih, K.()

Archive of Applied Mechanics, Springer, 03.02.2007, vol. 77, no. 7, pp. 523-539

Abstract: Inspired by literature on free transversal vibrations of one axially moving belt, we derive and solve analytically coupled partial differential equations of the transversal vibrations of an axially moving sandwich double-belt system. A numerical expe...

[... More](#)



Energy analysis in a nonlinear hybrid system containing linear and nonlinear subsystems coupled by hereditary element

Hedrih, K.()

Nonlinear Dynamics, Springer Netherlands, 30.01.2007, vol. 51, no. 1, pp. 127-140

Abstract: Energy transfer between subsystems coupled by standard light hereditary element in hybrid system is very important for different engineering applications, especially for dynamical absorption. An analytical study of the energy transfer between coupled...

[... More](#)



Energy transfer in double plate system dynamics

(Stevanović) Hedrih, K.

Acta Mechanica Sinica, Springer, 09.01.2008, vol. 24, no. 3, pp. 331-344

Abstract: The study of energy transfer between coupled subsystems in a hybrid system is very important for applications. This paper presents an analytical analysis of energy transfer between plates of a visco-elastically connected double-plate system in free t...

... More



Transversal forced vibrations of an axially moving sandwich belt system

(Stevanović) Hedrih, K.

Archive of Applied Mechanics, Springer, 22.11.2007, vol. 78, no. 9, pp. 725-735

Abstract: Based on the author's previously published results for transversal free vibrations of axially moving sandwich belts described by coupled partial differential equations, which are derived and analytically solved, this paper contains new analytical res...

... More



Energy interaction between linear and nonlinear oscillators (energy transfer through the subsystems in a hybrid system)

Hedrih (Stevanović), K.

Ukrainian Mathematical Journal, Springer US, 03.12.2008, vol. 60, no. 6, pp. 927-949

Abstract: The analysis of the energy transfer between subsystems coupled in a hybrid system is an urgent problem for various applications. We present an analytic investigation of the energy transfer between linear and nonlinear oscillators for the case of free...

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Articles

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Transversal vibrations of double-plate systems
Hedrih, K.
Acta Mechanica Sinica, Springer, 21.07.2008, vol. 22, no. 5, pp. 487-501

Abstract: This paper presents an analytical and numerical analysis of free and forced transversal vibrations of an elastically connected double-plate system. Analytical solutions of a system of coupled partial differential equations, which describe correspond...

... More

Double plate system with a discontinuity in the elastic bonding layer
(Stevanović) Hedrih, K.
Acta Mechanica Sinica, Springer, 17.03.2007, vol. 23, no. 2, pp. 221-229

Abstract: The double plate system with a discontinuity in the elastic bonding layer of Winkler type is studied in this paper. When the discontinuity is small, it can be taken as an interface crack between the bi-materials or two bodies (plates or beams). By com...

... More

Transversal vibrations of the axially moving sandwich belts
Hedrih, K.
Archive of Applied Mechanics, Springer, 03.02.2007, vol. 77, no. 7, pp. 523-539

Abstract: Inspired by literature on free transversal vibrations of one axially moving belt, we derive and solve analytically coupled partial differential equations of the transversal vibrations of an axially moving sandwich double-belt system. A numerical exp...

... More

Energy analysis in a nonlinear hybrid system containing linear and nonlinear subsystems coupled by hereditary element
Hedrih, K.
Nonlinear Dynamics, Springer Netherlands, 30.01.2007, vol. 51, no. 1, pp. 127-140

Abstract: Energy transfer between subsystems coupled by standard light hereditary element in hybrid system is very important for different engineering applications, especially for dynamical absorption. An analytical study of the energy transfer between coupled...

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Page 2 of 2



Energy transfer in double plate system dynamics

(Stevanović) Hedrih, K.

Acta Mechanica Sinica, Springer, 09.01.2008, vol. 24, no. 3, pp. 331-344

Abstract: The study of energy transfer between coupled subsystems in a hybrid system is very important for applications. This paper presents an analytical analysis of energy transfer between plates of a visco-elastically connected double-plate system in free t...

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Transversal forced vibrations of an axially moving sandwich belt system

(Stevanović) Hedrih, K.

Archive of Applied Mechanics, Springer, 22.11.2007, vol. 78, no. 9, pp. 725-735

Abstract: Based on the author's previously published results for transversal free vibrations of axially moving sandwich belts described by coupled partial differential equations, which are derived and analytically solved, this paper contains new analytical res...

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Energy interaction between linear and nonlinear oscillators (energy transfer through the subsystems in a hybrid system)

Hedrih (Stevanović), K.

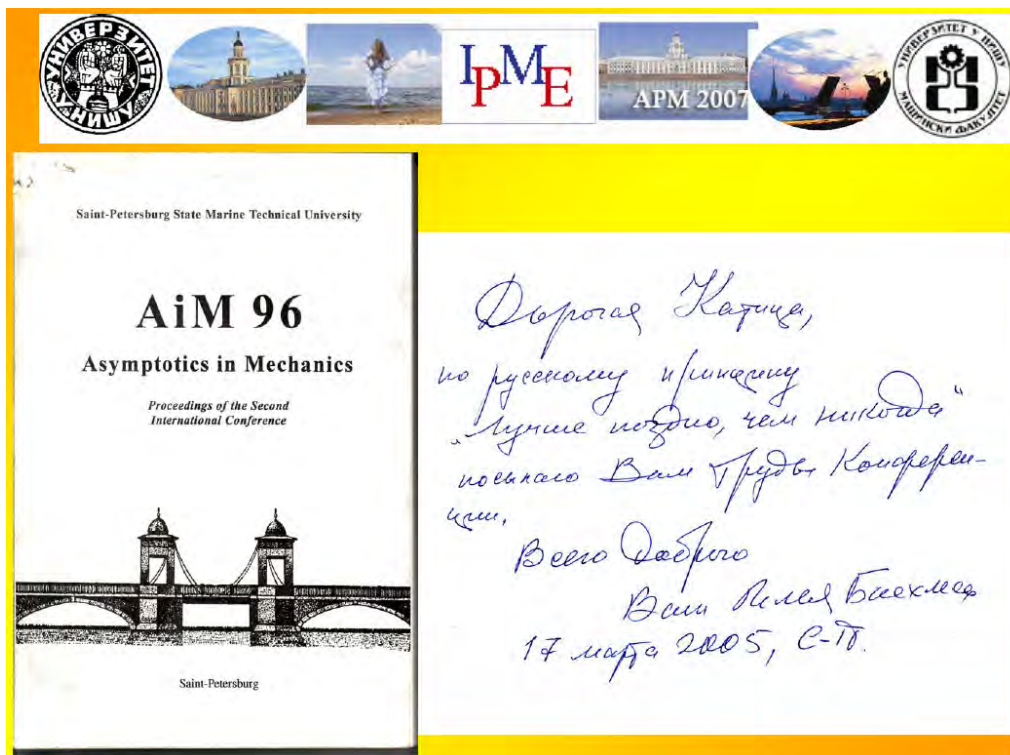
Ukrainian Mathematical Journal, Springer US, 03.12.2008, vol. 60, no. 6, pp. 927-949

Abstract: The analysis of the energy transfer between subsystems coupled in a hybrid system is an urgent problem for various applications. We present an analytic investigation of the energy transfer between linear and nonlinear oscillators for the case of free...

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LIST OF PAPERS and Monographs and Chapters in Monograph (from 2001 to 2005)

Part IA* Monographs and Chapters in Monograph:

Hedrih (Stevanović) K., (2005), *Nonlinear Dynamics of a Heavy Material Particle Along Circle which Rotates and Optimal Control*, Chaotic Dynamics and Control of Systems and Processes in Mechanics (Eds: G. Rega, and F. Vestroni), p. 37-45. IUTAM Symp. Book, **in Series Solid Mechanics and Its Applications, Edited by G.M.L.Gladwell, Springer.**

2005, XXVI, 504 p., Hardcover ISBN: 1-4020-3267-6

Serijska IUTAM Symp. Book knjiga u seriji **Solid Mechanics and Its Applications, Edited by G.M.L.Gladwell, (Kluwer) Springer**, je jedna od najznacajnijih serija u oblasti savremene nelinearne mehanike a pod pokroviteljstvom IUTAM- Interacionalne unije teorijske i primenjene mehanike pod UNESCO-om i može se porediti sa radovima u časopisima **10% sa vrha ISI liste.**

Kategorija R21 = R51.

[http://www.springeronline.com/cgi/cda/frontpage/0,11855,5-40356-69-33113256-](http://www.springeronline.com/cgi/cda/frontpage/0,11855,5-40356-69-33113256-detailsPage%253Dbbookseries%257Ctitles%257Ctitles%2526DISPLAY_TYPE%253DDISPLAY_TYPE_TITLES,00.html)
[detailsPage%253Dbbookseries%257Ctitles%257Ctitles%2526DISPLAY_TYPE%253DDISPLAY_TYPE_TITLES,00.html](http://www.springeronline.com/cgi/cda/frontpage/0,11855,5-40106-69-33113256-0,00.html?changeHeader=true)
<http://www.springeronline.com/cgi/cda/frontpage/0,11855,5-40106-69-33113256-0,00.html?changeHeader=true>



Katica (Stevanović) Hedrih: **Vector Method of the Heavy Rotor Kinetic Parameter Analysis and Nonlinear Dynamics, University of Niš 2001, Monograph, p. 252.** (in English), (Reviewers: Academician NANU Ju. A. Mitropol'skiy, Ukraina., Prof Veljko Vujčić, academician UHEAS Oleg Aleksandrovič Goroshko, Ukraina, and prof. dr Vlatko Brčić), **YU ISBN 86-7181-046-1 UDC 531.38:514.742.4**

Monografija na engleskom, recenzije međunarodne, recenzent akademik Mitropol'skiy je ključno ime nelinearne mehanike među živim naučnicima pripadnik poznate škole asimptotskih metoda nelinearne mehanike Krilov Bogoljubov Mitropol'skiy

- Kategorija R11=R51.



Oleg Aleksandrovič Goroshko (Ukraina) i Katica (Stevanović) Hedrih (Jugoslavija): **Analitička dinamika (mekanika) diskretnih naslednih sistema, (Analytical Dynamics (Mechanics) of Discrete Hereditary Systems), University of Niš, 2001, Monograph, p. 426 (in Serbian), YU ISBN 86-7181-054-2. (recenzenti: Veljko A. Vujčić - Srbija, Jeremiah Jaredam Rushickij - Ukrajina, Milivoje Simonović -Srbija) UDC 531.011:531.391**

Međunarodna recenzija, Savezno Ministarstvo za nauku SRJ je bilo sufinansijer i monografija je dobila pozitivnu recenziju i Eksperta Saveznog Ministarstva Dragoslava Šumarca.

Ova monografija je međunarodnog karaktera, te s obzirom da je na srpskom treba da se vrednuje bar sa R51.



Katica (Stevanović) Hedrih, (2005), **Partial Fractional Order Differential Equations of Transversal Vibrations of Creep-connected Double Plate Systems, Fractional Differentiation and its Applications Edited by Alain Le Mahaute, J. A. Tenreiro Machado, Jean Claude Trigeassou and Jocelyn Sabatier, Volume 2 - Econophysics, mechanics, material modelling, thermal systems, electronics, electrical systems, France-Portugal, 2005., pp. 25-38. (prihvateno za štampu)**

Hedrih (Stevanović) K., (2005), Partial Fractional Order Differential Equations of Transversal Vibrations of Creep-connected Double Plate Systems, in Monograph - Fractional Differentiation and its Applications, Edited by Alain Le Mahaute, J. A. Tenreiro Machado, Jean Claude Trigeassou and Jocelyn Sabatier, U-Book, pp. 289-302.

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Hedrih (Stevanović), K., *Discrete Continuum Method*, Symposium, Recent Advances in Analytical Dynamics Control, Stability and Differential Geometry, Proceedings Mathematical Institute SANU Edited by Vladan Djordjević, p.151, 2002, pp.30-57. ISBN 86-80593-32-X. <http://www.mi.sanu.ac.yu/publications.htm>
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ISSN: 0025-6455 (Paper) 1572-9648 (Online) DOI: 10.1023/B:MECC.0000022994.81090.5f, Issue: Volume 39, Number 3, Date:

June 2004

Pages: 295 - 314

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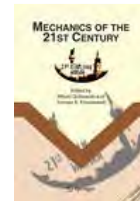


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Bogdan Ilich Kindratskiy

Киндрацкий Богдан Ильич, «МНОГОКРИТЕРИАЛЬНЫЙ СТРУКТУРНО-ПАРАМЕТРИЧЕСКИЙ СИНТЕЗ МАШИНОСТРОИТЕЛЬНЫХ КОНСТРУКЦИЙ», ученой степени доктора технических наук по специальности 05.02.02 — машиноведение, УДК 621.001.2:519.168

Predsedavanje na naučnim skupovima i članstvo u naučnim odborima:

Chairman at scientific meetings and member in Scientific Committee

- * IFNA WCNA 2004. jednom plenarnom sednicom i Minisimpozijumom, Član naučnog odbora (GOC-WCNA 04)
- * The eleventh world congress in Mechanism and machine Sciences, IFTOMM, Tianjin, China, April 1-4, 2004. predsedavala u sekciji Nonlinear Oscillations.
- * Conference on Nonlinear Dynamics, NTU "Kharkov Polytechnical Institute", Sept 10-20, 2004. Predsedaval poluplenarnim predavanjem i učestvovala po pozivu u Closing Session.
- * Eighth American Congress of Applied Mechanics PACAM VIII. La Habana, Cuba, 5-9 January 2004. planirano je da predsedavam sekcijom Dynamics, ali nisam otputovala zbog nedostatka sredstava za put.
- * Scientific-expert conference on Railways - XII RAILKON'04, Faculty of Mechanical Engineering University of Niš. - jednom plenarnom sednicom na kojoj je održano predavanje po pozivu gosta iz Japana Hiroshi Yabuna.
- * The First International Conference on Computational Mechanics (CM'04), In memory of Prof.dr Mladen Berkovic, 46 MMM, © 2004, BELGRADE, SERBIA AND MONTENEGRO, NOVEMBER 15-17, 2004. predsedavala jednom sekcijom.
- * XIX Conference with International Participation-Noise and Vibration, Niš 2004, predsedvala jednom sekcijom i član naučnog odbora.

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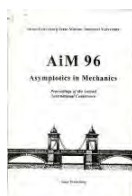
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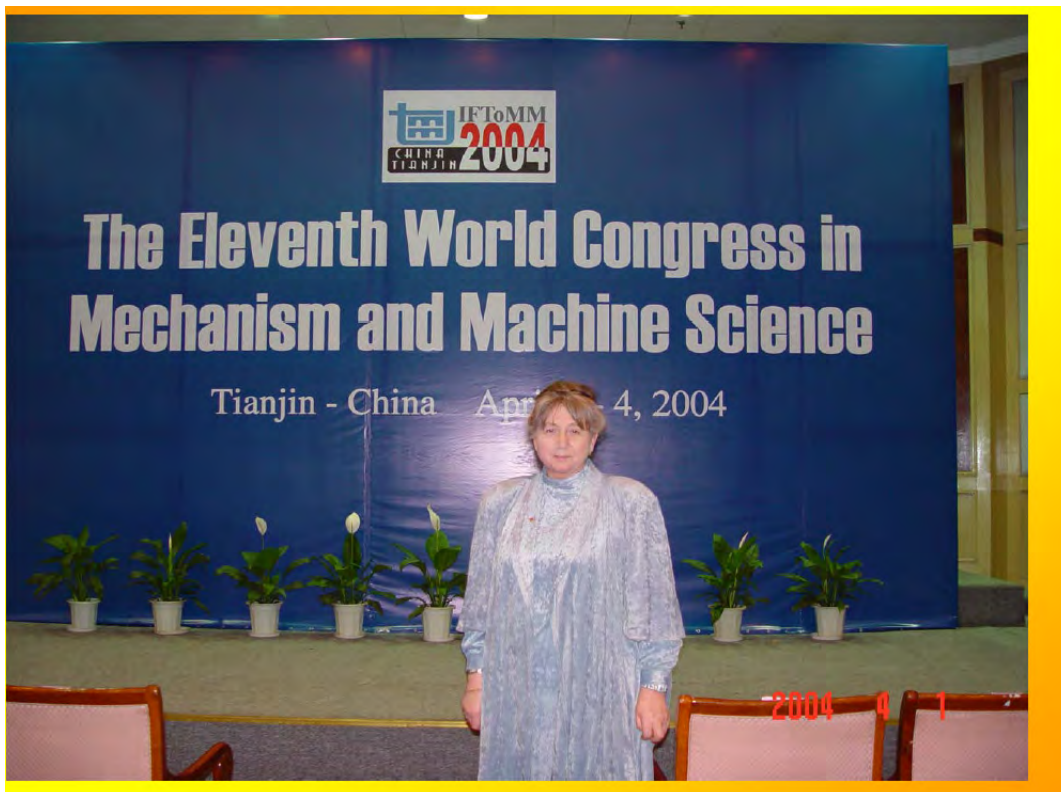


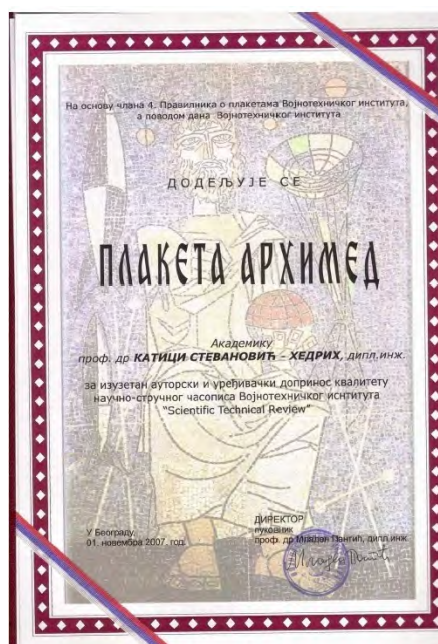
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organizirao Dr. Kiril V. Rozdestvensky
17. maja 2004, C.T.*











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Листівці академічних нагород

На згадку

Лауреати академічних нагород
Академії наук вищої школи України

2010

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