**The Program of**

The [Symposium “Nonlinear dynamics - Scientific work of Prof. Dr Katica (Stevanovic) Hedrih](http://www.mi.sanu.ac.rs/novi_sajt/research/conferences/ksh/default.htm)”

Mathematical Institute of the Serbian Academy of Sciences and Arts,

September 04 - 06, 2019, Belgrade, Serbia

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| DAY 1 (04.09.2019.) |
| 09:30 - 10:30 | **Opening Ceremony**Juliana Simonović. Scientific work of Prof. Dr Katica (Stevanovic) Hedrih  |
| 10:30 – 12:00 | **Plenary Session (Chairs: K. (Stevanovic) Hedrih, M. Kojic)** |
|  | 10:30 - 11:00 | Milos Kojic, Miljan Milosevic, Vladimir Simic, Vladimir Geroski and Bogdan Milicevic - A NOTE ON THE SMEARED CONCEPT IN FE MODELING OF COMPOSITE CONTINUUM |
|  | 11:00 - 11:30 | J. Awrejcewicz,REGULAR AND CHAOTIC DYNAMICS OF COUPLED PENDULUMS IN ELECTRIC-MAGNETIC FIELD |
|  | 11.30 - 12.00 | L.V. Kurpa, T.V. Shmatko - RESEARCH OF STABILITY AND NONLINEAR VBRATIONS OF SANDWICH PLATES WITH FUNCTIONALY GRADED CORE BY RITZ’S METHOD AND THE R-FUNCTIONS THEORY |
| 12.00 - 12.30 | **Coffee Break** |
| 12.30 - 13.50 | **Invited Lectures (Chairs: J. Awrejcewicz, O. Nakonechnyi)** |
|  | 12:30 - 12:50 | O. Nakonechnyi, V. Martsenyuk, A. Klos-Witkowska and A. Sverstiuk - ON STABILITY INVESTIGATION OF IMMUNOPIXEL ARRAY ON RECTANGULAR AND HEXAGONAL LATTICES |
|  | 12:50 - 13:10 | Sarbari Guha - NONLINEAR DYNAMICAL SYSTEMS IN GENERAL RELATIVITY AND COSMOLOGY |
|  | 13:10 - 13:30 | L. Cveticanin -DYNAMICS OF THE BODY WITH VARIABLE MASS |
|  | 13:30 - 13:50 | Arena A. Lacarbonara W. - NONLINEAR MODELS OF ROLLER BATTERIES AND EXPERIMENTAL VALIDATION |
| 14.00 - 15.00 | **Lunch Break** |
| 15:00 - 16.30 | **Technical Session (Chairs: Sarbari Guha, D. Milosavljevic)** |
|  | 15:00 – 15:15 | V.N. Burlayenko and S.D. Dimitrova - DYNAMIC ANALYSIS OF INTERFACE CRACK GROWTH IN DCB SANDWICH SPECIMENS |
|  | 15:15 – 15:30 | Lj. Veljovic. STABILITY OF THE HEAVY GYRO-ROTOR WITH TWO SKEW ROTATING AXES |
|  | 15:30 – 15:45 | Z. Galym, Hamza Bin Tariq, C. Spitas - Dynamical modelling and analysis of a misalignment-insensitive spur gear transmission using a Rzeppa joint |
|  | 15:45 – 16:00 | D. Zorica - HEAT CONDUCTION EQUATIONS INCLUDING MEMORY AND NON-LOCAL EFFECTS |
|  | 16:00 – 16:15 | T. Sandev - TEMPERED DYNAMICS FROM GENERALIZED LANGEVIN EQUATION AND GENERALIZED DIFFUSION-WAVE EQUATIONS |
|  | 16:15 – 16:30 | J.R. Erić Obućina - NONLINEAR CONTROL OF A HYDRAULIC SYSTEM |
| 16.30 – 17:00 | **Coffee Break** |
| 17:00 - 18.15 | **Technical Session (Chairs: T. Sandev, D. Zorica)** |
|  | 17:00 – 17:15 | S. Maksimović, K. Maksimović and I. Vasović - CFD CALCULATION OF COMPOSITE UNMANNED AERIAL VEHICLE FOR ITS STRENGTH ANALYSIS |
|  | 17:15 – 17:30 | S. Boljanović - STRENGTH ANALYSIS OF DAMAGED WING SKIN UNDER CYCLIC LOADING |
|  | 17:30 – 17:45 | Đ.S. Čantrak, N.Z. Janković and D. B. Ilić. - KOLMOGOROV LAW IN ANALYSIS OF THE TURBULENT SWIRL FLOW IN PIPE |
|  | 17:45 – 18:00 | J. Bogdanović-Jovanović. AERODYNAMIC NOISE IN CENTRIFUGAL LOW-PRESSURE FANS |
|  | 18:00 – 18:15 | L. D. Akulenko, D.D. Leshchenko, K.S. Paly - PERTURBED MOTIONS OF A SPHEROID WITH CAVITY CONTAINING A VISCOUS FLUID |
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| DAY 2 (05.09.2019.) |
| 09:30 - 10.50 | **Invited Lectures (Chairs: V. Heletiy, F. Georgiades)** |
|  | 09:30 - 09:50 | Z. Terze, D. Zlatar and V. Pandža - NOVEL CONTROL ALGORITHM FOR INSECT TYPE FLAPPING WING MUAV |
|  | 09:50 - 10:10 | F. Georgiades - OBSERVATION ABOUT PERPETUAL POINTS IN DISSIPATIVE NATURAL NONLINEAR MECHANICAL SYSTEMS |
|  | 10:10 - 10:30 | P.S. Krasilnikov, A.V. Dobroslavskiy - ON THE EVOLUTION OF BALLOON SATELLITE MOTIONS IN THE PLANE RESTRECTED FOUR BODY PROBLEM WITH THE LIGHT PRESSURE |
|  | 10:30 - 10:50 | V. Heletiy - COMPUTER MODELING OF THE DYNAMICS OF ROPE TRANSPORT SYSTEMS |
| 10.50 - 11.30 | **Coffee Break** |
| 11.30 - 12.50 | **Invited Lectures (Chairs: L. Cveticanin, M.V. Shitikova)** |
|  | 11:30 - 11:50 | M.V. Shitikova and A.L. Katembo - DYNAMICS OF SUSPENSION BRIDGES: NONLINEAR FREE AND FORCED VIBRATIONS WITH INTERNAL RESONANCES |
|  | 11:50 - 12:10 | T. Nestorović and A. Oveisi - NONLINEAR RECURRENT WAVLET NEURAL NETWORK BASED CONTROLLER FOR VIBRATION SUPPRESSION |
|  | 12:10 - 12:30 | M.P. Lazarević, P.D. Mandić - FURTHER RESULTS ON ADVANCED MODELING AND CONTROL OF COMPLEX MECHANICAL SYSTEMS |
|  | 12:30 - 12:50 | Y.V. Mikhlin, T.V. Shmatko, G.V. Rudneva and K.Y. Plaksiy - NONLINEAR NORMAL MODES AND TRANSIENT NORMAL MODES |
| 13.00 - 14.00 | **Lunch Break** |
| 14:00 - 16.00 | **Technical Session (Chairs: T. Nestorović, T.V. Shmatko)** |
|  | 14:00 – 14:15 | Y. Sughiyama, S. Nakashima and T.J. Kobayashi - A LARGE DEVIATION THEORY FOR AN AGE-STRUCTURED POPULATION DYNAMICS AND ITS APPLICATION TO INFERENCE OF CELL STATES |
|  | 14:15 – 14:30 | V. F. Hatipoğlu - LAKE POLLUTION DYNAMICS WITH MEMORY EFFECT |
|  | 14:30 – 14:45 | A. Kovačević, Luka Č. Popović - SPECTROSCOPY INVESTIGATIONS OF EXTRAGALACTIC OBJECTS IN SERBIA |
|  | 14:45 – 15:00 | Z. Rakarić, B. Stojić - DYNAMIC ANALYSIS OF NOVEL MONOSTABLE MECHANISM OF DIPTERA FLIGHT |
|  | 15:00 – 15:15 | C. Spitas, M. M. S. Dwaikat, V Spitas - A model for frequency-independent elastic hysteresis in the time domain |
|  | 15:15 – 15:30 | M. Stamenković Atanasov - MAGNETIC AND THERMAL EFFECTS ON THE FORCED VIBRATION OF NONLOCAL DOUBLE-NANOPLATE-BEAM SYSTEM |
|  | 15:30 – 15:45 | S.M. Kalinović and J.M. Djoković - THERMAL DYNAMIC PERFORMANCE OF THE WALLS |
|  | 15:45 – 16:00 | S.M. Paunović - INFLUENCE OF A STIFF CORE ON THE ENERGY HARVESTING POTENTIAL OF FRACTIONAL-ORDER MULTI-BEAM-MASS SYSTEMS |
| 16.00 – 16:30 | **Coffee Break** |
| 16:30 - 18.15 | **Technical Session (Chairs: A. Kovačević, S.Stojanovic )** |
|  | 16:30 – 16:45 | S.B. Stojanovic, M.M. Stevanovic - A DELAY DECOMPOSITION APPROACH TO STABILITY OF DISCRETE-TIME NEURAL NETWORKS WITH TIME-VARYING DELAY |
|  | 16:45 – 17:00 | N. D. Nešić, S. Jović - DYNAMICS OF COMPLIANT MECHANISM CONSISTING OF EULER-BERNOULLI BEAMS |
|  | 17:00 – 17:15 | Lj.B. Kevac, M.M. Filipovic - RESEARCH RESULTS IN THE FIELD OF CABLE SUSPENDED PARALLEL ROBOTS - CPR SYSTEMS |
|  | 17:15 – 17:30 | M. Cajić - NONLINEAR VIBRATION ANALYSIS OF A NANOBEAM ON FRACTIONAL VISCO-PASTERNAKFOUNDATION USING TWO APPROACHES |
|  | 17:30 – 17:45  | M.M. Filipović, Lj.B. Kevac, Ž.D. Stikić - THEORY CONTRIBUTIONS – NECESSITY FOR PRACTICAL RESULTS |
|  | 17:45 – 18:00 | I.D. Atanasovska, R.M. Mitrovic and N.D. Soldat - THE INTRODUCTION OF DAMAGE FACTOR IN DYNAMICS OF ROLLING BEARINGS |
|  | 18:00 – 18:15 | J. Awrejcewicz, A.V. Krysko, E.Yu. Krylova, T.Y. Yaroshenko, M.V. Zhigalov, V.A. Krysko - VIBRATION OF FLEXIBLE SHELLS UNDER MECHANICAL AND THERMAL LOADS AND CORROSION |
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| DAY 3 (06.09.2019.) |
| 09:30 - 10.30 | **Invited Lectures (Chairs: I. Kovacic, Z. Terze,)** |
|  | 09:30 - 09:50 | D.I. Milosavljevic, M. Zmindak and A. Radakovic - MATCHED ASYMPTOTIC ANALYSIS OF WAVES IN FIBRE REINFORCED PLATE SYSTEMS |
|  | 09:50 - 10:10 | I. Kovacic -EXACT SOLUTIONS FOR THE RESPONSE OF FREE AND FORCED NONLINEAR OSCILLATORS: THEORY AND APPLICATIONS |
|  | 10:10 - 10:30 | A.M. Obradović, R.D. Radulović - GLOBAL MINIMUM TIME FOR THE MOTION OF MECHANICAL SYSTEMS |
| 10.30 - 11.00 | **Coffee Break** |
| 11:00 - 12.00 | **Technical Session (Chairs: J. Simonović, A. Hedrih)** |
|  | 11:00 – 11:15 | E. Malkowsky and V. Velickovic - Applications of Measures of Noncompactness in Operator Theory |
|  | 11:15 – 11:30 | M. Trajković-Milenković and O.T. Bruhns - VERIFICATION OF THE CONSTITUTIVE MODEL OF ISOTROPIC ELASTIC-PERFECTLY PLASTIC MATERIAL BEHAVIOUR DUE TO LARGE DEFORMATIONS |
|  | 11:30 – 11:45 | A. N. Hedrih, I. Atanasovska and Dj. Jovanovic - INFLORESCENCE INSPIRED COMPLEX OSCILLATORY SYSTEMS |
|  | 11:45 – 12:00 | Katica R. (Stevanović) Hedrih and Marija D. Mikić - ROLLING A HEAVY BALL OVER PARABOLA AND ITS GENERALISATIONS IN REAL PLANE |
|  | 12:00 – 12:15 | J. Simonović - CONTROLLABILITY OF TRANSITION JUMPS OF COMPLEX STRUCTURES |
| 12:15 - 13.45 | **Technical Session (Chairs: M. Trajković-Milenković, N. Trisovic)** |
|  | 12:15 – 12:30 | Marija N. Vukšić Popović, Djordje D. Jovanović - IMPROVEMENT OF TRAIN DYNAMICS USING NON-LINEAR MODELLING OF FRICTION DRAFT GEAR |
|  | 12:30 – 12:45 | A.Z. Ivanović-Šašić, S.N. Blagojević, V.M. Marković, S.R. Anić, Ž.D. Čupić, L.Z. Kolar-Anić - NONLINEAR REACTION SYSTEMS. EVOLUTION OF DYNAMIC STATES |
|  | 12:45 – 13:00 | Nataša R. Trišović, Ana S. Petrović - MODEL TESTING OF COMPLEX STRUCTURES FROM THE ASPECTS OF DYNAMICS |
|  | 13:15 – 13:30 | B. Milenković - DYNAMIC BALANCING OF THE SLIDER CRANK MECHANISM |
|  | 13:30 – 13:45 | D. Karličić - NONLINEAR DYNAMICS OF A MAGNETIC ENERGY HARVESTING DEVICE USING SIMPLIFIED MODEL |
| 14.00 - 15.00 | **Closing Ceremony** |