

**1<sup>st</sup> International Congress of Serbian Society of  
Mechanics, 10-13<sup>th</sup> April, 2007, Kopaonik**

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# Program

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<http://www.ssm.org.yu/congress2007.html>

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“The whole heaven is number and harmony”  
Pythagoras

“Give me a place to stand and i can move the world”  
Archimedes

“Whot is time? If nobody asks me, I know, but if I want to explain it to some one, then I do not know”.  
("Quid est ergo tempus? Si nemo ex me quaerat, scio; si quarenti explicare velim, nescio".)  
St. Augustine



Dear Colleague,

On behalf of the Organizing Committee and the Scientific Advisory Board of more than 50 world renowned experts it is my great pleasure to welcome you at the 1<sup>st</sup> International Congress on Theoretical and Applied Mechanics that is held at Kopaonik, Serbia, April 10-13, 2007. The Congress is organized by **Serbian Society of Mechanics**, under the auspice of **Ministry of Science and Environmental Protection of Republic of Serbia (MNTR)** and is supported by **Serbian Chamber of Engineers**.

Congress will focus in all aspects of Mechanics.

The papers, contributed by authors from all around the globe, have been separated into 10 sections which cover the main areas of interest, e.g. 'Plenary lectures', 'Section A', Section B', Section C', Section D' and Five Minisiposia.

The Congress is giving 'A Tribute to Milutin Milanković', great Serbian scientist in the field of Mechanics and Astrophysics. Regrettably so far there was no presence of Prof. Milanković at previous Congresses, even he was alive when YU Society of Mechanics was established in 1954. Besides the scientific program the two round tables are included in the Program of the Congress.

Last, but by no means least, the Congress organizing committee wishes to acknowledge the collaboration of the Ministry of Science and environmental protection, Serbian Chamber of Engineers, Municipality of Raška and Many Supporting members of the Serbian Society of Mechanics listed in the program.

I am sure that besides the superb technical program, you will enjoy the majestic winter resort of Kopaonik, with its unique ski slopes and scenic beauty and the traditional Serbian hospitality.

Welcome to Kopaonik.

Welcome to the 1<sup>st</sup> International Congress of Serbian Society of Mechanics, Kopaonik, April 10-13, 2007

dr Dragoslav Šumarac

A handwritten signature in black ink, appearing to read "Dragoslav Šumarac".

President of Serbian Society of Mechanics

# 1<sup>st</sup> ICSSM - TIMETABLE

	Monday April 9	Tuesday April 10				Wednesday April 11				Thursday April 12				Friday April 13			
8:00-9:00		<b>Registration</b>															
9:00-9:15		<b>Opening Ceremony</b>				Plenary Lecture P3: Prof. Robin Tucker (M4)				Plenary Lecture P4: Prof. Nikola Hajdin				<b>Invited Lecture</b>			
9:15-9:30		Plenary Lecture P1: Prof. Đorđević				Prof. Robin Tucker (M4)				Plenary Lecture P4: Prof. Nikola Hajdin				M3-0			
9:30-9:45		Prof Atanacković												<b>Invited Lecture</b>			
9:45-10:00										<b>Invited Lecture</b>				M5-1			
10:00-10:15		Plenary Lecture P2: Prof. John Katsikadelis				A-1				Invited Lecture				<b>The Annual Meeting of SSM</b>			
10:15-10:30						C-1				M1-1							
10:30-10:45										Invited Lecture				M2-1			
10:45-11:00		<b>Coffee Break</b>				<b>Coffee Break</b>				<b>Coffee Break</b>				<b>Coffee Break</b>			
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>M1</b>	<b>M2</b>	<b>C</b>	<b>M5</b>	<b>M5</b>	<b>C</b>		
11:00-11:20		2	1	2	1	14	8	20	12	13	6	24	2		13	35	
11:20-11:40		3	2	37	2	15	3	33	13	14	7	25	3		14	3	
11:40-12:00		4	9	4	4	16	C36	15	8	15	8	26	4		VD	41	
12:00-12:20						13											
13:00-14:00														<b>Closing Ceremony</b>			
14:00-15:00																	
15:00-16:00																	
16:00-17:00		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>M5</b>	<b>M1</b>	<b>C</b>	<b>D</b>	<b>M1</b>	<b>M2</b>	<b>C</b>	<b>M5</b>				
17:00-17:20		5	4	5	3	15	5	13	6	16	9	6	5				
17:20-17:40		6	5	38	5	16	11	17	16	17	10	28	6				
17:40-18:00		7	6	7	15	17	7	18	DM	18	11	29	7				
18:00-18:20		8	7	8	7	18	8	19	IS	19	12	14	8				
18:20-18:40		<b>Coffee Break</b>				<b>Coffee Break</b>				<b>Coffee Break</b>							
18:40-19:00		10	M3 1	9	14	M4 1	20	16	M2 2	9	13	31	9				
19:00-19:20		17	2	10	9	2	10	21	3	2	14	32	10				
19:20-19:40		11	3	11	10	3	6	22	4	3	15	30	11				
19:40-20:00		12	4	12	11	4	12	34	5	4	16	23	12				
20:00-20:20		9	5	40	17	5	21	39	V.V.			27	19				
20:20-21:00																	
21:00-22:00		<b>Welcome Cocktail</b>				<b>Round Table</b>				<b>Round Table</b>				<b>Congress Dinner (banquet)</b>			
		Subjects of Mechanics on the Universities of Serbia according to Bologna declaration <i>Mladenović, Mitrović</i>				Design and Construction of Highways in Greece: The case of EGNATIA ODOS Motorway in Northern Greece <i>A. Liolios, Vice Charimen Egnatia Odos</i>				<b>"Rastko Stojanović" Award</b>							

Minisymposia: M1-Stevan Maksimović; M2-Nenad Filipović; M3-Vladimir Dragović;

M4-Milan Mićunović; M5-Stojan Sedmak

Invited lecture A-1: Katica Stevanović Hedrih

Invited lecture C-1: Livija Cveticanin

Invited lecture M1-1: Dubravka Mijuca

Invited lecture M2-1: Dimitrios Fotiadis

Invited lecture M3-0: Vladimir Dragovic

Invited lecture M5-1: Stojan Sedmak

DM – D. Milosavljevic, IS – I. Sestak, VV – V. Vujicic, VD, BG – V. Dragovic, B. Gajic

Plenary/Invited Lectures: Room 1, Round Tables: Room 1

- A Tribute to Milutin Milanković



### Serbian Society of Mechanics

The Serbian Society of Mechanics is a voluntary, non-governmental, vocational and professional, non-political union of scientists and experts engaged in work in theoretical and applied mechanics; it is established on the principle of freedom of association and open to collaboration with other scientists and experts, economic and other organizations, on the basis of mutual appreciation, respect and independence in work, organized in order to achieve common and general aims and objectives.

### Aims and Objectives of the SSM

- to bring together researchers and practicing engineers involved in theoretical and applied mechanics, with the aim of encouraging development and making advances in all areas of theoretical and applied mechanics
- to help all members of the SSM with the scientific and professional development
- to take care of the youth working in this field
- to enable the members of the SSM to conduct research into some areas of mechanics, establishing collaboration with other types of organizations
- to publish, support and help to publish scientific books, journals and other publications
- to develop close and creative collaboration with the Serbian Chamber of Engineers and the Union of Engineers and Technicians of Serbia
- to support and organize scientific gathering, publishing of scientific papers and other publications which are of interest to the members of the society

### Officers

President: **Dragoslav Šumarac**

Vice President: **Miloš Nedeljković**

Treasurer and Secretary: **Dragoslav Kuzmanović**

## Sponsors

The Congress 2007 Organizing Committee would like to thank the following Organizations for their support to 1<sup>st</sup> International Congress organized by Serbian Society of Mechanics

**Ministry of Science and Environmental Protection of Republic of Serbia (MNTR)**



**Serbian Chamber of Engineers**



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**Previous Yugoslav Congresses on  
Theoretical and Applied Mechanics (TAM)**

- 25<sup>th</sup> Congress on TAM, Novi Sad, June, 2005
- 24<sup>th</sup> Congress on TAM, Belgrade, June, 2003
- 23<sup>rd</sup> Congress on TAM, Belgrade, June, 2001
- 22<sup>nd</sup> Congress on TAM, Vrnjačka Banja, June, 1997
- 21<sup>st</sup> Congress on TAM, Niš, June, 1995
- 20<sup>th</sup> Congress on TAM, Kragujevac, August, 1993
- 19<sup>th</sup> Congress on TAM, Ohrid, June, 1990
- 18<sup>th</sup> Congress on TAM, Vrnjačka Banja, June, 1988
- 17<sup>th</sup> Congress on TAM, Zadar, June, 1986
- 16<sup>th</sup> Congress on TAM, Bečići, June, 1983
- 15<sup>th</sup> Congress on TAM, Kupari, June, 1981
- 14<sup>th</sup> Congress on TAM, Portorož, June, 1978
- 13<sup>th</sup> Congress on TAM, Sarajevo, June, 1976
- 12<sup>th</sup> Congress on TAM, Ohrid, June, 1974
- 11<sup>th</sup> Congress on TAM, Baško Polje, June, 1972
- 10<sup>th</sup> Congress on TAM, Baško Polje, June, 1970
- 9<sup>th</sup> Congress on TAM, Split, June, 1968
- 8<sup>th</sup> Congress on TAM, Split, June, 1966
- 7<sup>th</sup> Congress on TAM, Vrnjačka Banja, June, 1964
- 6<sup>th</sup> Congress on TAM, Split, June, 1962
- 5<sup>th</sup> Congress on TAM, Bled, June, 1960
- 4<sup>th</sup> Congress on TAM, Opatija, February, 1958
- 3<sup>rd</sup> Congress on TAM, Bled, June, 1956
- 2<sup>nd</sup> Congress on TAM, Bled, February, 1954
- 1<sup>st</sup> Congress on TAM, Bled, February, 1952

<b><u>FUND «RASTKO STOJANOVIC»</u></b> <b><u>1992, June, Baško Polje.</u></b> <b><u>«RASTKO STOJANOVIC» WAS FOUNDED</u></b>	
<p><b><u>AWARDS «RASTKO STOJANOVIC»</u></b></p> <p>1974. (Ohrid) Janez DUHOVNIK Đorđe ĐUKIĆ</p> <p>1976. (Sarajevo) Franc KOSEL Dušan MIKIĆ Hajrudin PAŠIĆ</p> <p>1978. (Portorož) Vukman ČOVIĆ Milenko STEGIĆ Milan MIĆUNOVIĆ Stojančo STOJMANOVSKI</p> <p>1981. (Kupari) Vlado LUBARDA Iztok ŽUN</p> <p>1984 (Bečići) Stanko BRČIĆ Ranislav BULATOVIĆ Gorgi KOKALANOV Joško OŽBOLT Polde ŠKERGET</p> <p>1986. (Zadar) Igor EMRI Željko GOJA Livija CVETIĆANIN</p> <p>1988. (Vrnjačka Banja) Dragoslav ŠUMARAC</p> <p>1990. (Ohrid) Aleksandar OBRADOVIĆ</p> <p>1995. Ivan KOSTIĆ Borislav GAJIĆ Božidar JOVANOVIĆ</p> <p>1997. Srboljub SIMIĆ Miroslav ŽIVKOVIĆ Aleksandar FILIPOVSKI</p> <p>2005 Ivana Kovačić</p>	<p><b><u>PRAISES «RASTKO STOJANOVIC»</u></b></p> <p>1976. (Sarajevo) Vinko JOVIĆ Dušan MIĆEVIĆ Petar VUKOSLAVČEVIĆ</p> <p>1978. (Portorož) Teodor ATANACKOVIĆ Dubravko NARDINI Miran SAJE</p> <p>1984. (Bečići) Gligor RADENKOVIĆ Srđan RUSOV Milivoje SIMONOVIĆ Dragoslav ŠUMARAC Dragomir ZEKOVIĆ</p> <p>1986. (Zadar) Nikola MLADENOVIĆ Grozde ALEKSOVSKI Đorše VUKOVIĆ</p> <p>1988. (Vrnjačka Banja) Silvo BIZJAK Cvetko CRNOJEVIĆ Jurica SORIĆ</p> <p>1990. (Ohrid) Mugdim PAŠIĆ Dragan JOVANOVIĆ</p> <p>1995. Aleksandar FILIPOVSKI</p>

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	<b>Nataša Trišović</b>	Faculty of Mechanical Engineering, Belgrade, Serbia

## Opening & Plenary Sessions

“The book of Nature cannot be understood unless one first learns the language and can decipher the letters of which it is composed. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures without which it humanly impossible to understand a single word of it”.

Galileo

## Opening Ceremony

<b>Monday,</b> <b>April 9</b>	<b>20:00 - 22:00</b>	<b>REGISTRATION</b> <b>WELCOME RECEPTION</b>
<b>Tuesday,</b> <b>April 10</b>	<b>8:00 - 9:00</b>	<b>REGISTRATION</b>

## Early Morning Session

<b>9:00-9:15</b>	<b>Opening Ceremony</b>
<i>Chairmen: dr Dragoslav Šumarac, President of SSM dr Dragoslav Kuzmanović, Secretary of SSM dr Miloš Nedeljković, Vice-president of SSM</i>	
Welcome address by 1 <sup>st</sup> ICSSM Chairman Professor D.Šumarac	
Address by: Representative of Ministry of Science and Environmental Protection Representative of Serbian Chamber of Engineers Representative of Municipality of Raska	

## A TRIBUTE TO MILUTIN MILANKOVIC

*“...But, for about 50 years, Milankovitch’s theory was largely ignored. Then, in 1976, a study published in the journal Science examined deep-sea sediment cores and found that Milankovitch’s theory did in fact correspond to periods of climate change (Hays et al. 1976). Specifically, the authors were able to extract the record of temperature change going back 450,000 years and found that major variations in climate were closely associated with changes in the geometry (eccentricity, obliquity, and precession) of Earth’s orbit. Indeed, ice ages had occurred when the Earth was going through different stages of orbital variation. Since this study, the National Research Council of the U.S. National Academy of Sciences has embraced the Milankovitch Cycle model. ...orbital variations remain the most thoroughly examined mechanism of climatic change on time scales of tens of thousands of years and are by far the clearest case of a direct effect of changing insolation on the lower atmosphere of Earth (National Research Council, 1982).”*

## Plenary Lectures

*Chairs: Robin Tucker, Milan Mićunović*



**9:15-10:00 On the Application of Fractional Calculus in Mechanics**

*Vladan D. Djordjević  
Teodor M. Atanackovic*

*In this reviewing paper some of the basic applications of fractional calculus in mechanics are elucidated. In addition, the underlying mathematical background and some historical remarks are given. The point in the paper is on the application of fractional calculus in viscoelasticity, i.e. on the use of four-parameter generalized Zener model in exploring viscoelastic properties of various materials. Also, it is shown in the paper that fractional derivatives can be successfully used in modeling some of the boundary conditions in fluid mechanics, in particular in rarefied gas dynamics, in which, as shown, the entire range of variations of the Knudsen number can be covered by a single fractional slip boundary condition. As a contribution to the mathematical theory of fractional nonlinear differential equations we show that some of them, like heat conduction equation, and a combination of Burgers and Korteweg-de Vries equation, possess similarity solutions. We present some exact and numerical solutions of the resulting nonlinear fractional ordinary differential equations.*

### NOTES:



10:00-10:45

**A Generalized Ritz Method for Partial Differential Equations in Domains of Arbitrary Geometry using Global Shape Functions**

*John Katsikadelis*

*A new BEM based meshless variational method is presented for the solution of elliptic PDEs describing the mechanical response of general inhomogeneous anisotropic bodies of arbitrary geometry. The equations, which in general have variable coefficients, may be linear or nonlinear. Using the concept of the analog equation of Katsikadelis the original equation is converted into a linear membrane (Poisson) or a linear plate (biharmonic) equation, depending on the order of the PDE under a fictitious load, which is approximated with radial basis function series of multiquadric (MQ) type. The integral representation of the solution of the substitute equation yields shape functions, which are global and satisfy both essential and natural boundary conditions, hence the name generalized Ritz method.*

**NOTES:**

**Wednesday,  
April 11**

**Early Morning Session**

*Chairs: John Katsikadelis, Vladan Djordjevic*



**9:00 - 9:45**

**New Mathematical Modelling of Ultra-Relativistic Charge**

*Robin Tucker*

*The method of moving Cartan frames is used to analyse the influence of geometry on the behaviour of electromagnetic fields in confining guides and the effect of such fields on their ultra-relativistic sources. Such issues are of relevance to a number of topical problems in accelerator science where the need to control the motion of high current-density micro-meter size bunches of relativistic radiating charge remains a technical and theoretical challenge. By dimensionally reducing the exterior equations for the sources and fields on spacetime using symmetries exhibited by the confining guides one achieves a unifying view that offers natural perturbative approaches for dealing with smooth non-uniform and curved guides. The issue of the back-reaction of radiation fields on the sources is approached in terms of a simple charged relativistic fluid model.*

**NOTES:**

**Thursday,  
April 12**

**Early Morning Session**

*Chairs: Teodor Atanackovic, Miloš Nedeljković*



**9:00 - 9:45**

**Application of Mechanics in Engineering Sciences and Practice - The State of the Art and Perspective**

*Nikola Hajdin*

*"Already at the beginning of last century many scientists became aware of the increased volume of mechanics and of a whole series of new fields that enrich this science with new meaning. In his article "A Look at the Development of Mechanics", printed in the Serbian Literary Gazette Milanković says: "One of the characteristics of modern mechanics is that it is hard to precisely draw and mark its borders. It is becoming increasingly difficult to restrict its field that has been spreading from the beginning, covering other sciences. Borders between individual parts of physics are gradually disappearing so that these parts, which were considered independent until recent, are increasingly merging into one complex whole."*

**NOTES:**

# 1<sup>st</sup> ICSSM Technical Program

*“Nature and Nature’s laws,  
    lay hid in night:  
God said, Let Newton be!  
    and all was light.”*

*Alexander Pope*

## Section A

Tuesday, April 10

### Morning Session

*Chairs: Katica (Stevanović) Hedrih, Mihailo Lazarevic*

Room I

11:00 - 11:20	<b>Active Tilting Train as a Closed Kinematic Chain with Brancing</b> A2: S. Rusov, N. Mladenović, Z. Mitrović
11:20 - 11:40	<b>On the Influence of Strong Cubic Non-Linearity to the Existence of Periodic Solutions of the Mathieu-Duffing Equation</b> A3: I. Kovačić, L. Cvetičanin
11:40-12:00	<b>Higher Order Algorithms for Control of Mechanical Systems Motion: Classical and Decomposition Approach</b> A4: M. Živanović

### Afternoon Session

*Chairs: Nikola Mladenovic, Ratko Maretic*

Room I

17:00 - 17:20	<b>Electroviscoelasticity of Liquid/Liquid Interfaces: Fractional Order Van Der Pol Model – New Results</b> A5: M. Lazarević, A. Spasić
17:20 - 17:40	<b>Optimal Control for Distributed Parameter Systems</b> A6: D. Perišić
17:40-18:00	<b>About Analytical Synthesis of the Mechanisms with High Class Kinematic Groups</b> A7: M. Čavić, M. Zlokolica, M. Kostić

### Late Afternoon Session

*Chairs: Veljko Vujičić, Ivana Kovacic*

Room I

18:40-19:00	<b>Extendable Shock Absorber Model under Nonlinear Impulse Force</b> A10: O. Jeremić, M. Milinović, A. Kari
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1<sup>st</sup> ICSSM – TIMETABLE AND PROGRAM

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19:00-19:20	Vibrations of a Rotating Annular Plate Loaded by a Torque
	A17: R. Maretić, V. Glavardanov
19:20-19:40	Experimental and Theoretical Model of Absorber with Nonlinear Damping Performances
	A11: A. Kari, M. Milinović, O. Jeremić
19:40-20:00	Subharmonic Oscillations in a Non-Ideal Mechanical System
	A12: Z. Rakarić, M. Zuković
20:00-20:20	Design of Controllable Suspension System
	A9: V. Gavriloski, D. Korunoski, H. Mickoski

Wednesday,  
April 11

Morning Session

Chairs: John Katsikadelis, Vladan Djordjević



9:45 - 10:15	<b>Hybrid System Dynamics</b> Invited Lecture A1: Katica R. (Stevanović) Hedrih
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Chairs: Vukman Čović, Miroslav Veskovac

Room I

11:00 - 11:20	<b>Hamilton's Inverse Problem</b> A14: V. Vujičić
11:20 - 11:40	<b>A Simplified Earthquake Dynamics of a Column Like Structure with Fractional Type of Dissipation</b> A15: M. Žigić, N. Grahovac, D. Spasić
11:40-12:00	<b>On Multiple Impacts with Fractional Type of Dissipation</b> A16: N. Grahovac, M. Žigić, D. Spasić
12:00-12:20	<b>Elastoplastic Impact of the Sphere upon the Nonclassical Plate</b> A13: A. Loktev, I. Lokteva

## Section B

Tuesday,  
April 10

### Morning Session

*Chairs: Miloš Nedeljković, Srboljub Simić*

Room II

11:00 - 11:20	<b>Influences of Nozzle Diameter, Standoff Distance and Angle of Attack on Cavitation Erosion due to Impingement of High-Submerged Cavitating Water-Jets</b> <b>B1:</b> <i>E. Hutli, M. Nedeljković, N. Radović</i>
11:20 - 11:40	<b>Influences of Hydrodynamic Parameters and Temperature on Cavitation Erosion due to Impingement of High-Submerged Cavitating Water-Jets</b> <b>B2:</b> <i>E. Hutli, M. Nedeljković, N. Radović</i>
11:40-12:00	<b>Uncertainties in Surface Layer Flux Calculations Using Gradient and Profile Methods</b> <b>B9:</b> <i>T. Weidinger, Á. Bordás, D. T. Mihailović, A. Z. Gyöngyösi, A. Machon, K. Pintér and L. Horváth</i>

### Afternoon Session

*Chairs: Bosko Rasuo, Dusan Zorica*

Room II

17:00 - 17:20	<b>Boundary Element Dual Reciprocity Method with Multi Domains for Modelling Two-Phase Flow</b> <b>B4:</b> <i>T. Samardžioska</i>
17:20 - 17:40	<b>Shock Structure in a Hyperbolic Model of Binary Mixture of Non-Reacting Gases</b> <b>B5:</b> <i>S. Simić, T. Ruggeri</i>
17:40-18:00	<b>Diffusion-Wave Equation with Two Fractional Derivatives</b> <b>B6:</b> <i>T. Atanacković, S. Pilipović, D. Zorica</i>
18:00 - 18:20	<b>Construction of Rotating Table for Geophysical Fluid Dynamics Classroom Demonstrations</b> <b>B7:</b> <i>I. Gúth, Á. Bordás</i>

### NOTES:

Wednesday,  
April 11

Morning Session

*Chairs: Nenad Radović, Arpad Bordas*

Room II

11:00 - 11:20	<b>Methods for the External Characteristics Computation for Hydrodynamic Torque Converters</b> <b>B8:</b> A. Gajić, B. Ivljanin, E. Džindo
11:20 - 11:40	<b>Plane Laminar Compressible Boundary Layer on a Rotating Surface</b> <b>B3:</b> M. Pavlović
11:40 - 12:00	<b>Innovative Design Approaches for Airfoils of Wind Turbine Blades</b> <b>C36:</b> B. Rašuo, V. Parezanović, M. Adžić

Section C

Tuesday,  
April 10

Morning Session

*Chairs: Stanko Brčić, Sergej Aizikovich*

Room III

11:00 - 11:20	<b>New Algorithms of the General Force Method</b> <b>C2:</b> Lj. Savić
11:20 - 11:40	<b>Applications of Fourth - Order Tensors in Computational Mechanics</b> <b>C37:</b> D. Milosavljević, G. Bogdanović
11:40 - 12:00	<b>Steel Fiber Reinforcement Analysis in Cement Composite Materials</b> <b>C4:</b> D. Jevtić, D. Zakić, A. Savić

NOTES:

### Afternoon Session

*Chairs: Milan Dedić, Ljubomir Savić*

Room III

<b>17:00 - 17:20</b>	<b>Forced Vibrations of the Double Circular Plate System with Viscoelastic Layer</b> <b>C5:</b> K. (Stevanović) Hedrih, J. Simonović
<b>17:20 - 17:40</b>	<b>Nonlinear Effects in Linear Elastic Continuous Composite Steel Concrete Beam Analysis</b> <b>C38:</b> S. Seizović, B. Deretić-Stojanović
<b>17:40-18:00</b>	<b>Numerical Analysis of Working Weel's Casing Structure of Roto Dredging Machine in Working Conditions</b> <b>C7:</b> S. Makragić
<b>18:00 - 18:20</b>	<b>Calculation of Revolving Platform of Bucket Wheel Excavators</b> <b>C8:</b> S. Bošnjak, A. Simonović, N. Zrnić, N. Gnjatović

### Late Afternoon Session

*Chairs: Dragan Milosavljević, Federico Bartolozzi*

Room III

<b>18:40-19:00</b>	<b>Boundary Element Dual Reciprocity Method with Multi Domains for Modelling Fractured Porous Media</b> <b>C9:</b> Z. Zafirovski, T. Samardžioska
<b>19:00-19:20</b>	<b>Numerical and Experimental Analysis of Prismatic Beam Postbuckling Behaviour under Displacement Dependent Loading</b> <b>C10:</b> S. Isić, V. Doleček, I. Karabegović
<b>19:20-19:40</b>	<b>Contribution to the Finite Element Stability Analysis of Plane Frame Structures</b> <b>C11:</b> S. Čorić, S. Brčić
<b>19:40-20:00</b>	<b>An Analysis of the Equivalent Stiffnesses of Beam-Like Trusses with Constant Cross-Section</b> <b>C12:</b> M. Dedić, M. Todorović
<b>20:00-20:20</b>	<b>Subsonic Aircrafts' Unsteady Lateral-Directional Stability Derivatives Calculation</b> <b>C40:</b> N. Marićić

**NOTES:**

**Wednesday,  
April 11**

**Morning Session**

*Chairs: John Katsikadelis, Vladan Djordjevic*



- 10:15 - 10:45      Dynamics of the System with Discontinual Mass Variation  
Invited Lecture**

C1: *Livija Cvetičanin*

*Chairs: Vlatko Dolecek, Marko Jakomin*

Room III

- 11:00 - 11:20      A Numerical Approach for the Seismic Interaction  
Between Adjacent Structures**
- C20: *Ast. Liolios, J. Rentzeperis, P. Panetsos,  
Ang. Liolios*
- 11:20 - 11:40      On Force Method Algorithms**
- C33: *Lj. Savić*
- 11:40 - 12:00      Finite Strip Method in Analysis of Optimal Rectangular  
Bending Bridge Plates**
- C15: *D. Milašinović, R. Cvijić, A. Borković*

**Afternoon Session**

*Chairs: Dragan Milasinovic, Livija Cveticanin*

Room III

- 17:00 - 17:20      Finite Element Modelling of Piezoelectric Devices with  
Gyration and Temperature Effects**
- C13: *A. Nasedkin*
- 17:20 - 17:40      Calculation of Turbine Blade Life During Reverse  
Engineering Process**
- C17: *N. Davidović, P. Miloš*
- 17:40 - 18:00      Aseismic Construction with Hinged Floors**
- C18: *F. Bartolozzi*
- 18:00 - 18:20      Testing of Different Types of "Simplorit"  
Plates - Lightweight Concrete Elements**
- C19: *D. Jevtić, D. Zakić, A. Savić*

**Late Afternoon Session**

*Chairs: Andre Nasedkin, Nikola Maricic*

Room III

<b>18:40-19:00</b>	<b>Vibration Design Criterion for Wood Floor Systems</b> C16: <i>B. Stevanović, N. Bunčić, I. Glišović</i>
<b>19:00-19:20</b>	<b>Determination of the Ultimate Load for Longitudinaly Stiffened Plate Girders Subjected to Patch Load</b> C21: <i>N. Marković</i>
<b>19:20-19:40</b>	<b>Stochastic Stability of The Rotating Shaft</b> [3] <i>Ratko Pavlovic, P. Kozic, Ivan Pavlovic</i>
<b>19:40-20:00</b>	<b>Finite Element Model for the Static Analysis of Laminated Composite and Sandwich Plates</b> C34: <i>M. Ćetković</i>
<b>20:00-20:20</b>	<b>Development of Sensors Oriented Dynamics Model of Rotor as Basis of Machines Diagnostic</b> C39: <i>R. Antunović</i>

Thursday,  
April 12

**Morning Session**

*Chairs: Asterios Liolios, Nenad Markovic*

Room III

<b>11:00 - 11:20</b>	<b>Analytical Solutions of the Crack Problem for Functional Gradient Materials</b> C24: <i>S. Aizikovich, L. Krenev, B. Sobol, I. Trubchik</i>
<b>11:20 - 11:40</b>	<b>Diagnostic of the Dynamic Behavior of Drive Unit</b> C25: <i>T. Maneski, V. Milošević Mitić, D. Ignjatović, N. Andelić</i>
<b>11:40 - 12:00</b>	<b>Analysis of Stress-Strained State at the Interface Between the Functionally Graded Coating and the Elastic Half-Space Caused by Spherical Indentation</b> C26: <i>S. Aizikovich, L. Krenev, I. Trubchik, E. Ambalova</i>

**Afternoon Session**

*Chairs: Milan Batista, Tomislav Iglić*

Room III

<b>17:00 - 17:20</b>	<b>Analytical and Numerical Solutions of Internal Forces by Cylindrical Pressure Vessel with Semi-Elliptical Heads</b> C6: <i>P. Baličević, D. Kozak, D. Kraljević</i>
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	<b>Problems in the Modeling of Steam Boiler</b>
17:20 - 17:40	C28: <i>V. Milošević Mitić, T. Maneski, B. Gačeša</i>
	<b>Nonlinear Analysis of Cylindrical Shells Using the Analog Equation Method. A Boundary-Only Solution</b>
17:40 - 18:00	C29: <i>J. Katsikadelis, A. Yiotis</i>
	<b>The Optimization of a Thin Walled I-Beam Subjected to Displacement Constraints</b>
18:00 - 18:20	C14: <i>N. Andelić, V. Milošević Mitić</i>

**Late Afternoon Session**

*Chairs: Taško Maneski, Nina Andjelic*

Room III

18:40-19:00	<b>3D Analysis of Thick Shells by the Meshless Analog Equation Method</b> C31: <i>J. Katsikadelis, J. Platanidi</i>
19:00-19:20	<b>Snap-Through of the System of Open SRoomow Ax-Symmetric Bimetallic Shell by Non-Linear Theory</b> C32: <i>M. Jakomin, F. Kosel, M. Batista, T. Kosel</i>
19:20-19:40	<b>A BEM based Meshless Variational Method for Solving Linear and Nonlinear Plate Problems</b> C30: <i>J. Katsikadelis, N. Babouskos</i>
19:40-20:00	<b>Lateral Torsional Buckling of the Steel Monosymmetric Cross – Sections</b> C23: <i>T. Iglić, M. Damnjanović, D. Đurić - Mijović, A. Cilić</i>
20:00-20:20	<b>Stress State Analyses in Stress Concentration Conditions During Destruction</b> C27: <i>N. Plavšić, Z. Stamenić</i>

**Friday,**  
**April 13**

**Morning Session**

*Chairs: Todorka Samardzioska, Djordje Vuksanovic,*

Room III

11:00 - 11:20	<b>Closed Form Solutions for the Stability and Free Vibration Analysis of Laminated Composite Plates</b> C35: <i>M. Ćetković, Đ. Vuksanović</i>
11:20 - 11:40	<b>Instrument for Detecting Critical Frequency</b> C3: <i>F. Constantin</i>
11:40 - 12:00	<b>Beam Optimization on Shape and Boundary Conditions with Frequency Constraints</b> C41: <i>N. Trišović, T. Maneski, D. Šumarac, Z. Golubović</i>

## Section D

Tuesday,  
April 10

### Morning Session

Room IV

*Chairs: Zoran Golubovic, Safet Isic*

11:00 - 11:20	<b>A Review of Patch Loading Researches at the Faculty of Civil Engineering In Podgorica, Montenegro</b> <b>D1:</b> <i>D. Lučić, B. Šćepanović, S. Aleksić</i>
11:20 - 11:40	<b>Intelligent Control Systems of Wood Drying Processes</b> <b>D2:</b> <i>I. Karabegović, S. Omer, A. Hodžić</i>
11:40 - 12:00	<b>Dynamic Behavior of the High Power Turbogenerator Rotor Caused by Temperature Changes</b> <b>D4:</b> <i>M. Jevtić, B. Grujić, M. Dostanić</i>

### Afternoon Session

Room IV

*Chairs: Ranislav Bulatovic, Srdjan Rusov*

17:00 - 17:20	<b>Vision Sensors and their Application at Industrial Robots</b> <b>D3:</b> <i>V. Doleček, D. Hodžić, S. Vojić, I. Karabegović</i>
17:20 - 17:40	<b>Intelligent System in the Drying Process "Socrates Evolution"</b> <b>D5:</b> <i>A. Hodžić, I. Karabegović, S. Omer</i>
17:40 - 18:00	<b>Eccentrically Patch Loaded Steel I-Girders</b> <b>D15:</b> <i>B. Šćepanović</i>
18:00 - 18:20	<b>Seismic Response of Steel Frame Structures</b> <b>D7:</b> <i>S. Aleksić</i>

### Late Afternoon Session

Room IV

*Chairs: Dusko Lucic, Nebojsa Vasovic*

18:40-19:00	<b>Dynamic Fragmentation: Geometric Approach</b> <b>D14:</b> <i>P. Elek, S. Jaramaz</i>
19:00-19:20	<b>Artificial Intelligence and its Use in Industrial Robots Control in Space</b> <b>D9:</b> <i>I. Karabegović, S. Vojić, D. Hodžić, V. Doleček</i>
19:20-19:40	<b>Motion of a Hydrogen Molecule near the Carbon Nanotube</b> <b>D10:</b> <i>Z. Rajilić, S. Lekić, S. Njezić</i>

19:40-20:00	Deduction of the Gravity Law and Quantum Mechanical Model of Discretization in the Macroscopic Gravity System from Solar System Data D11: A. Tomić
20:00-20:20	Modeling of the Heat and Mass Transfer in a Devolatilizing Coal Particle D17: M. Paprika, M. Komatina, D. Dakić

**Wednesday,  
April 11**

**Morning Session**

Room IV

*Chairs: Mila Kazic, Samir Vojic*

11:00 - 11:20	Synchronization of Ikeda Systems with Nois, Internal Delay and Delayed Coupling D12: K. Todorović, N. Vasović
11:20 - 11:40	Some Models for Hydrodynamic Influence on a Multi-Layer Coal Seam D13: A. Nasedkin, A. Nasedkina, V. Trufanov
11:40 - 12:00	From Geometrical Fractal Theory to Fractal Mechanics D8: Đ. Koruga

**Afternoon Session**

Room IV

*Chairs: Zoran Rajilic, Valentin Glavardanov*

17:00 - 17:20	Determination of Scara Manipulator Position and Orientation Error by using Jacobian Inverse Kinematic Algorithms with Matlab/Simulink D6: H. Mickoski, K. Angusev, V. Gavriloski
17:20 - 17:40	Mathematical Procedure for Estimating Carrying Capacity of Thin-Walled I-Girders under Patch Loading D16: D. Lučić, S. Aleksić, B. Šćepanović
17:40 - 18:00	Dynamic Analysis of Composite Multilayered Elastic Plate using Transver Matrix Method [61] - Milosavljevic Dragan
18:00 - 18:20	Aproximation of Hemivariational Inequality in Linear Thermoelasticity (on Uncoupled Problem of Linear Thermoelasticity) [91] - Sestak Ivan

**Minisymposia:  
Computational Methods in Structural Analysis and Optimization by FEM**



Organizer:  
Stevan Maksimović

**Wednesday,  
April 11**

*"In this minisymposium computation methods are intensively used in many papers that consider failure of structural components. Special attention has been focused on developing computation methods in fatigue life estimations. Two general approaches are investigation: i) computation methods in life estimations of structural components up to crack initiation and crack propagation. Fatigue life prediction for cracked structural parts with the classical finite element method is not obvious task for industrial structures. Improved computation methods, based on using special singular finite elements and X-FEM (eXtended Finite Element Methods) are presented in papers of this minisymposium."*

*"I would like to thank the authors for their efforts and cooperation in making the minisymposium within 1<sup>st</sup> ICSSM and the publishing of the present publication possible."*

**Afternoon Session**

Chairs: Dubravka Mijuca, Marinko Ugricic

Room II

17:00 - 17:20	<b>Analysis of Fatigue Crack Growth using Energy Parameters</b> M1-5: S. Boljanović, S. Maksimović, J. Zuidema, I. Belić
17:20 - 17:40	<b>Stress Analysis of Abutment Tooth with Conus Telescope Crown by Finite Elements</b> M1-11: M. Zejković, S. Maksimović, V. Zejković
17:40 - 18:00	<b>Low Cycle Fatigue Life Estimation of Dove Tail Joints</b> M1-7: S. Posavljak
18:00 - 18:20	<b>Evaluating Fracture Mechanical Parameters in Bimaterial Structures Thermally Loaded using FEM and J-Integral Approach</b> M1-8: D. Stamenković

**Late Afternoon Session**

Chairs: Dobroslav Ruzic - Ivana Atanasovska

Room II

18:40-19:00	<b>The Influence of Rounded Radius of Apertures upon Distribution of Tension at the Isotropic Plane Field</b> M1-20: M. Radojković, V. Nikolić-Stanojević, Z. Vasić
19:00-19:20	<b>Structural Analyses of Toroidal Containers for Liquefied Petroleum Gas (Lpg)</b> M1-10: V. Veličković, M. Bojanić, A. Grebović

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19:20-19:40	Determination of Shaped Charge Jet Stress and Deformation State Caused by Angular Velocity M1-6: <i>M. Ugrčić, S. Maksimović</i>
19:40-20:00	An Efficient Optimization Method to Minimum Weight Design of Large-Scale Structural Systems M1-12: <i>S. Maksimović</i>
20:00-20:20	Failure Analysis and Fracture Control of Wood Constructions using FE Simulations M1-21: <i>M. Komnenović, S. Maksimović</i>

Thursday,  
April 12

**Morning Session**



9:45 - 10:15	<b>On the Issue of Multiscale Robustness in Computational Mechanics</b> Invited Lecture M1-1: <i>Dubravka Mijuca</i>
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*Chairs: Teodor Atanackovic, Miloš Nedeljković*

*Chairs: Miroslav Zivkovic, Slobodanka Boljanovic*

Room I

11:00 - 11:20	<b>Failure Analysis of Composites Containing Pin-Load Holes Considering as FE Contact Problem</b> M1-13: <i>I. Ilić</i>
11:20 - 11:40	<b>Optimal Design of Structural Components Modeled by Finite Elements</b> M1-14: <i>D. Malobabić</i>
11:40 - 12:00	<b>Geometric and Material Nonlinear Behavior of Shell Type Structures by Finite Elements</b> M1-15: <i>M. Bojanic</i>

**Afternoon Session**

*Chairs: Vera Nikolic-Stanojevic, Vladimir Zeljkovic*

Room I

17:00 - 17:20	<b>Hyperelastic Material Models</b> M1-16: <i>B. Rosić, M. Živković</i>
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	<b>Drucker-Prager Material Model without Hardening</b> M1-17: <i>D. Rakić, M. Živković, D. Divac</i>
17:20 - 17:40	<b>Fatigue Life Estimation of Notched Specimens using Effective Strain Energy Density Factor</b> M1-18: <i>D. Ristić</i>
18:00 - 18:20	<b>Stability Analysis of Axially Composite Panels: Comparisons Numerical with Experimental Results</b> M1-19: <i>A. Đorđević</i>

Late Afternoon Session

*Chairs: Stevan Maksimovic i Gordana Jovicic*

Room I

18:40-19:00	<b>The Penalty Methods Applied to Nonlinear Contact Problems</b> M1-9: <i>S. Vulović, M. Živković, N. Grujović, A. Pavlović</i>
19:00-19:20	<b>Numerical Methods for Determination Crack Growth on the Real Structure</b> M1-2: <i>G. Jovićić, M. Živković, V. Vukadinović</i>
19:20-19:40	<b>Nonlinear Fem Applied to the Postbuckling Analysis of Axially Compressed Layered Composite Panels</b> M1-3: <i>D. Ružić, K. Maksimović</i>
19:40-20:00	<b>Developing of Gear FEM Model for Nonlinear Contact Analysis</b> M1-4: <i>I. Atanasovska, V. Nikolić, D. Momčilović, S. Vulović</i>

NOTES:

## Minisymposia: Biomechanics



Organizer:  
Nenad Filipovic

*"The Minisymposium Biomechanics contains the number of papers beginning from introduction lecture regarding ultrasonic guided wave propagation in long bones, blood flow through arteries, air flow through the lung and system of alveolas, spinal motion segment deformation, particle deposition in human lung, electrical stimulation, electromagnetic fields behavior on human, stent behavior in arteries, sports biomechanics, etc.*

*This Minisymposium will provide an unrivalled opportunity to meet and network with large numbers of biomechanics scientists in Serbia and Europe.*

*I want to thank all the colleagues for all the work they have done for preparing this Minisymposium Biomechanics. That would be also a great help for the development of biomechanics research and practice in Serbia."*

**Wednesday,  
April 11**

### Late Afternoon Session

*Chairs: Olga Miljkovic, Dimitrios Fotiadis*

Room IV

		<b>Modeling of Thrombosis by Dissipative Particle Dynamics</b> M2-2: N. Filipović, M. Kojić, A. Tsuda
	19:00-19:20	<b>Modeling of Cartilage Deformation during a Sportsman Training</b> M2-3: N. Filipović, R. Radaković, Đ. Kosanić
	19:20-19:40	<b>Finite Element Analysis of the Lumbar Intervertebral Disc: Patient-Specific Spine Model</b> M2-4: V. Isailović, N. Filipović, M. Kojić
	19:40-20:00	<b>Numerical Modeling of Particle Deposition in Human Lung</b> M2-5: M. Ivanović, N. Filipović, M. Kojić, A. Tsuda
	20:00-20:20	<b>The Paradox of the Lunar Orbit: One Possible Solution</b> [17] Vujicic Veljko, Tomic Aleksandar

**NOTES:**

Thursday,  
April 12

Morning Session

Chairs: Teodor Atanackovic, Miloš Nedeljković



10:15 - 10:45

**Modeling of Ultrasonic Guided Wave Propagation  
in Long Bones**

Invited Lecture

**M2-1:** Vasilios Protopappas, Maria Vavva,  
Dimitrios Fotiadis, Konstantinos Malizos,  
D. Polyzos

Chairs: Zoran Mitrovic, Vladimir Rankovic

Room II

11:00 - 11:20

**Motion of Aerosol Particle on Alveolar Membrane**

**M2-6:** B. Stojanović, M. Kojić, A. Tsuda

11:20 - 11:40

**Application of Grid Infrastructure in Biomedical  
Simulations**

**M2-7:** M. Krstić, M. Ivanović, L. Otašević, N. Filipović

11:40 - 12:00

**Value of Action as a Criteria for Classical and Quantum  
Object Consideration on Molecular Level**

**M2-8:** L. Matija, Đ. Koruga

Afternoon Session

Chairs: Djuro Koruga, Boban Stojanovic

Room II

17:00 - 17:20

**Application of Neural Network for Determination of  
Hemodynamic Factors in the Arterial Blood Flow**

**M2-9:** O. Miljković, M. Nedeljković, N. Filipović

17:20 - 17:40

**Finite Element Modeling of Electrical Stimulation on  
Lower Arm**

**M2-10:** M. Nedeljković, N. Filipović, J. Koelndorfer,  
M. Steiner, A. Vujanić

17:40 - 18:00

**Modeling of Electromagnetic Fields (Emf) in Wireless  
Sensor Networks and Effects on Human Health**

**M2-11:** A. Peulić, M. Nedeljković, N. Filipović

18:00 - 18:20

**Modeling of Particle Penetration into Tissue and  
Determination of Particle Submergence under Action of  
Surfactant**

**M2-12:** I. Vlastelica, B. Stojanović, M. Kojić

Late Afternoon Session

*Chairs: Spasic Dragan, Nenad Filipovic*

Room II

18:40-19:00	<b>Some Constitutive Models for Arterial Walls</b> <b>M2-13:</b> D. Veljković, V. Ranković, S. Pantović, M. Rosić, M. Kojić
19:00-19:20	<b>Transport of L-Arginine and it's Effects on Dynamic Response and Biomechanical Properties of Isolated Blood Vessels</b> <b>M2-14:</b> M. Rosić, S. Pantović, Z. Obradović, V. Ranković, N. Filipović, M. Kojić
19:20-19:40	<b>Trajectory Generation for Bipedal Walking</b> <b>M2-15:</b> N. Vuković, Đ. Koruga, M. Lazarević, Z. Milković
19:40-20:00	<b>A New Model for Biomechanics of Soft Tissue in Cardiovascular Systems</b> <b>M2-16:</b> D. Spasic, I.M. Mitic

NOTES:

## Minisymposia: Mathematical methods in Mechanics

Organizer:  
Vladimir Dragović

Tuesday,  
April 10

### Late Afternoon Session

Chairs: Vladimir Dragović, Borisav Gajic

Room II

18:40-19:00	<b>Some Results on the Stability of Dissipative Mechanical Systems</b> M3-1: R. Bulatović, M. Kazić
19:00-19:20	<b>Brachistohronic Motion of a Multibody System with Coulomb Friction</b> M3-2: V. Čović, M. Vesović
19:20-19:40	<b>Partial Lagrange-Routh Reduction</b> M3-3: B. Jovanović
19:40-20:00	<b>Different Approaches to Kowalevski Top</b> M3-4: K. Kukić
20:00-20:20	<b>On the Brachistochrone Problem with Coulomb Friction</b> M3-5: S. Šalinić

Friday,  
April 13

### Morning Session

Chairs: Alfio Grillo, Aleksandar Sedmak



9:00 - 9:30	<b>Dynamics and Geometry of Integrable Billiard Systems</b> Invited Lecture M3-IL: Vladimir Dragović
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## Minisymposia: Geometry in Physics



Organizer:  
Milan Mićunović

*"To underline the well recognized importance of Geometry in Physics let me quote just two sentences from the enlightening letter directed from Rastko Stojanović to RAAG-society of Japan (cf. *Theoret. Appl. Mech.* Vols-28-29):*

*If the geometry is to be understood as the theory of spaces, it must be inadmissible to build it on the too subjective and elementary observations supplied by our senses. The geometry must have the status of Natural Science, more precisely, it must be treated as a branch of Physics."*

*"It is my pleasure to thank the authors for their contributions to the subject of this minisymposium within 1st ICSSM."*

**Wednesday,  
April 11**

### Late Afternoon Session

*Chairs: Dragoslav Sumarac, Robin Tucker*

Room I

	<b>On the Effects of Geometry on Guided Electromagnetic Waves</b>
18:40-19:00	M4-1: Robin Tucker
	<b>A Multiscale Description of Growth and Transport in Biological Tissues</b>
19:00-19:20	M4-2: A. Grillo, G. Zingali, D. Borrello, S. Federico, W. Herzog, G. Giaquinta
	<b>On the Stationarity of the Strain Energy Density for Cubic Crystals</b>
19:20-19:40	M4-3: J. Jarić, Z. Golubović, D. Kuzmanović
	<b>Interpretation of the Lense-Thirring Effect: Theory and Experiment</b>
19:40-20:00	M4-4: S. Grozdanović
	<b>Notion of Approximate Symmetry in Composite Materials</b>
20:00-20:20	M4-5: L. Kudrjavceva, D. Šumarac, M. Mićunović

**NOTES:**

## Minisymposia: Fracture Mechanics Application in Structural Integrity Assessment

Organizer:  
Stojan Sedmak

*Minisymposium **Fracture Mechanics Application in Structural Integrity Assessment** in the scope of First International Congress of Serbian Society for Mechanics (1<sup>st</sup> ICSSM) is organize as a forum for exchanging the experience in considering the crack behaviour in components exposed to different loading conditions. The organizer of minisymposium **Fracture Mechanics Application in Structural Integrity Assessment** Prof. Stojan Sedmak wish to thank all the authors of papers for the efforts and excellent work, appreciating their contribution to the success and the level achieved.*

**Wednesday,**  
**April 11**

### Afternoon Session

*Chairs: Stojan Sedmak, Marko Rakin*

Room I

17:00 - 17:20	<b>Reliability Assessment of the Rail Runner Shafts</b> M5-15: M. Ognjanović
17:20 - 17:40	<b>Type IV Phenomena in Creep Resisting Steels</b> M5-16: Lj. Milović, D. Momčilović, S. Putić, B. Grujić
17:40 - 18:00	<b>An Estimation of Effects of Heat Treatment and Crack Length on Cracked Panels Integrity</b> M5-17: M. Kirić, A. Sedmak, J. Lozanović
18:00 - 18:20	<b>Causes for Integrity Losses of Steel Antenna Columns</b> M5-18: D. Blagojević, R. Cvijić, V. Golubović Bugarski, M. Todić

**Thursday,**  
**April 12**

### Morning Session

*Chairs: Meri Burzic, Milosav Ognjanovic*

Room IV

11:00 - 11:20	<b>The Factors Influencing the J Integral - CMOD Relationship for Cylinders</b> M5-2: M. Kirić
11:20 - 11:40	<b>Ductile Crack Growth Modelling in Strength Mismatched Welded Joints</b> M5-3: M. Dobrojević, M. Rakin, N. Gubeljak, M. Zrilić, A. Sedmak

**11:40 - 12:00      Behaviour of Metals under Impact Loading**  
M5-4: *D. Momčilović, I. Atanasovska, V. Grabulov*

**Afternoon Session**

*Chairs: Nenad Gubeljak, Zijah Burzic*

Room IV

<b>17:00 - 17:20</b>	<b>The Effect of Crack Tips Interaction on the Stress Intensity Factor</b> M5-5: <i>G. Kastratović</i>
<b>17:20 - 17:40</b>	<b>Cyclic Bending of Rectangular Tube Beam</b> M5-6: <i>D. Šumarac, D. Krajčinović, N. Trišović, M. Trajković</i>
<b>17:40 - 18:00</b>	<b>Fracture Toughness Prediction in 7000 Forging Alloys</b> M5-7: <i>Z. Cvijović, M. Rakin, M. Vratnica, I. Cvijović</i>
<b>18:00 - 18:20</b>	<b>Conventional and Fracture Mechanical Valuation of Structural Steels with High Toughness for S355, S460 Grade Steels</b> M5-8: <i>M. Shehu, P. Hubner, M. Cukalla, H. Shehu</i>

**Late Afternoon Session**

*Chairs: Drazan Kozak, Nadezda Filipovic*

Room IV

<b>18:40-19:00</b>	<b>Fatigue Behaviour of Alloyed Steel for High Temperature</b> M5-9: <i>M. Burzić, Z. Burzić, J. Kurai, Dž. Gačo</i>
<b>19:00-19:20</b>	<b>The Effect of Service Temperature and Life on the Fatigue Properties of High Alloyed Steel X20 under Variable Loading</b> M5-10: <i>Dž. Gačo, Z. Burzić, M. Burzić</i>
<b>19:20-19:40</b>	<b>The Effect of Operating Conditions on Mechanical Properties of High Alloyed Steel X20 CrMoV 12-1</b> M5-11: <i>D. Burzić, Dž. Gačo, M. Burzić</i>
<b>19:40-20:00</b>	<b>Crack Tip Strain and CTOD in Situ Measurement</b> M5-12: <i>N. Gubeljak, J. Lozanović, A. Sedmak</i>
<b>20:00-20:20</b>	<b>Numerical Method Application to Define Stone Block Destruction Force</b> M5-19: <i>M. Petrović, B. Nedeljković, Z. Lekić</i>

**Friday,  
April 13**

**Morning Session**



**9:30 - 10:00**

**Structural Integrity - A Problem of Cracked Components**

Invited Lecture

**M5-1: Stojan Sedmak**

*Chairs: Alfio Grillo, Aleksandar Sedmak*

Room IV

**11:00 - 11:20**

**Structural Damage Effects on Modal Behaviour in FRF Method**

**M5-13: V. Golubović-Bugarski, D. Blagojević**

**11:20 - 11:40**

**In Service Corrosion Damages of Process Equipment**

**M5-14: N. Filipović**

**11:40 - 12:00**

**Algebraic Curves And Systems Of Hess-Appel'rot Type**

*Dragovic Vladimir, Borisav Gajic*

*Chairs: Dejan Momcilovic, Milorad Zrilic*

**NOTES:**

**Round Table:  
Subjects of Mechanics on the Universities of Serbia according to Bologna  
declaration**

**Tuesday,  
April 10**

**Evening Session**

**21:00 - 23:00      Moderators:**



*Nikola Mladenović  
Full Professor, University of Belgrade  
Faculty of Mechanical Engineering  
Belgrade*



*Zoran Mitrović  
Associate Professor, University of Belgrade  
Faculty of Mechanical Engineering  
Belgrade*

**NOTES:**

**Round Table:  
Design and Construction of Highways in Greece:  
The case of EGNATIA ODOS Motorway in Northern Greece**

**Wednesday,  
April 11**

**Evening Session**

**21:00 - 23:00**      *Moderator: Professor Asterios LIOLIOS, Vice Chairman of the Board, EGNATIA ODOS A.E.*

**NOTES:**

## **GENERAL INFORMATION**

### **REGISTRATION**

All participants are requested to register. Registration takes place at the Congress Centre Registration Desk, in APP Konaci Hotel. All Congress material is handed out upon registration according to reservations made on the registration form.

### **IDENTIFICATION CARDS**

All registered participants receive a Identification Cards upon registration. Your IC is the document to enter the Congress and any of the working rooms. We kindly ask you to wear your IC visibly during all events.

### **LANGUAGE**

The official languages of the Congress are Serbian or English. Simultaneous translation will not be provided.

### **INSTRUCTIONS TO AUTHORS - SLIDE CENTRE**

Scientific Presentations will be given on Personal Computer: Power Point - 2006 (XP and previous versions). Alternatively, the overhead projector could be requested. Please ask for help at the Control Room in in APP Konaci Hotels not less than two hours before your presentation (or the day before, if your presentation is scheduled in the morning).

### **CONGRESS ASSISTANTS**

There is a Congress Assistant assigned to each working room to help Chairpersons and speakers to use presentation tools.