



Mini-symposium “Contact Mechanics: Theory and Applications”  
Mathematical Institute of SASA and Project OI 174001,  
Belgrade, Serbia, March 14, 2017

## PROGRAM OF MINI-SYMPOSIUM

### “Contact Mechanics: Theory and Applications”

Mathematical Institute of SASA and Project OI 174001,  
Belgrade, Serbia, March 14, 2017, from 10:30-19:00h, room II, first floor, Kneza Mihaila 36

### Програм Мини-симпозијума

### „Механика контакта: Теорија и примене“

Математички институт САНУ и Пројекат ОИ174001,  
Београд, 14. март 2017, од 10:30-19:00h, сала II, први спрат, Кнеза Михаила 36

**Organizers:** *dr Ivana D. Atanasovska*, Mathematical institute of SASA, Belgrade, Serbia  
*Prof. dr Katica R. (Stevanović) Hedrih*, Mathematical Institute of SASA, Belgrade and Faculty of  
Mechanical Engineering, University of Niš, Serbia  
**Co-organizer:** *Prof. dr Radivoje M. Mitrović*, University of Belgrade-Faculty of Mechanical Engineering,  
Belgrade, Serbia

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**Opening remarks:** *Prof. dr Katica R. (Stevanović) Hedrih, Prof. dr Radivoje M. Mitrović ,*  
*dr Ivana Atanasovska*  
**Уводна реч:** *Проф. др Катица Р. (Стевановић) Хедрих, Проф. др Радивоје Митровић,*  
*др Ивана Атанасовска*

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**I Session. Chairman:** *Prof. dr Katica R. (Stevanović) Hedrih*, Mathematical Institute of SASA, Belgrade and  
Faculty of Mechanical Engineering, University of Niš, Serbia  
*Prof. dr Gordana Kastratović*, University of Belgrade, Faculty of Transport and Traffic  
Engineering, Serbia

**I-1.** *Prof. dr Mirko Dinulović*, University of Belgrade-Faculty of Mechanical Engineering, Serbia,  
[mdinulovic@mas.bg.ac.rs](mailto:mdinulovic@mas.bg.ac.rs)

#### Contact problems in airframe structures on elastic supports

Проблеми контакта код ваздухопловних структура на еластичним ослоњцима

**I-2.** *Prof. dr Gordana Kastratović*, University of Belgrade, Faculty of Transport and Traffic Engineering, Serbia,  
[g.kastratovic@sf.bg.ac.rs](mailto:g.kastratovic@sf.bg.ac.rs)

#### Some aspects of 3D finite element modeling of contact effects in wire rope strands

Неки аспекти 3D моделовања утицаја контакта између жица у плетеним ужадима методом  
коначних елемената



- I-3.** *dr Ana Pavlović*, Alma Mater Studiorum- University of Bologna, Italy, [ana.pavlovic@unibo.it](mailto:ana.pavlovic@unibo.it)  
*dr Cristiano Fragassa*, Alma Mater Studiorum- University of Bologna, Italy, [cristiano.fragassa@unibo.it](mailto:cristiano.fragassa@unibo.it)  
*dr Snežana Vulović*, Faculty of Engineering, University of Kragujevac, Serbia, [vsneza@kg.ac.rs](mailto:vsneza@kg.ac.rs)

**Numerical simulation for investigating the contact problems in industrial life**

Нумеричке симулације у истраживањима контактних проблема у индустријском животу

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- II Session. Chairman:** *Prof. dr Vasilios Spitas*, National Technical University of Athens, Greece  
*dr Victor Roda-Casanova*, Jaume I University, Castellón, Spain

- II-1.** *Prof. dr Vasilios Spitas*, National Technical University of Athens, School of Mechanical Engineering ,  
Athens, Greece, [vspitas@central.ntua.gr](mailto:vspitas@central.ntua.gr)

**A quaternion-based analytical solution for the generalised 3-D non-conjugate  
gear contact analysis problem**

Аналитичко решење за генерализовану 3-D анализу некоњугованог контактнoг проблема код  
зупчаника, базирано на кватернионима

- II-2.** *dr Victor Roda-Casanova*, Jaume I University, Castellón, Spain, [vroda@uji.es](mailto:vroda@uji.es)  
*Prof. dr Francisco Sanchez-Marin*, Jaume I University, Castellón, Spain, [ftsan@uji.es](mailto:ftsan@uji.es)

**Contact analysis applied to gear design**

Анализа контакта у конструисању зупчаника

- II-3.** *dr Santosh Patil*, Department of Mechanical Engineering, Manipal University Jaipur, Jaipur, Rajasthan,  
India, [santosh.patil@jaipur.manipal.edu](mailto:santosh.patil@jaipur.manipal.edu)  
*Prof. dr Saravanan Karuppanan*, Department of Mechanical Engineering, Universiti Teknologi  
PETRONAS, Perak, Malaysia, e-mail: [saravanan\\_karuppanan@utp.edu.my](mailto:saravanan_karuppanan@utp.edu.my)  
*dr Ivana D. Atanasovska*, Mathematical institute of SASA, Belgrade, Serbia, [iviatanasov@yahoo.com](mailto:iviatanasov@yahoo.com)

**Effect of friction inclusion on gear contact stresses**

Утицај трења на контактне напоне код зупчаника

**Cocktail brake**

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- III Session. Chairman:** *Prof. dr Radivoje M. Mitrović*, University of Belgrade-Faculty of Mechanical  
Engineering, Serbia  
*dr Olivera Erić Cekić*, Innovation center, Faculty of Mechanical Engineering,  
University of Belgrade, Belgrade, Serbia



**III-1.** *Prof. dr Tatjana Lazović, Prof. dr Radivoje M. Mitrović, Žarko Mišković,*  
University of Belgrade-Faculty of Mechanical Engineering, Serbia  
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**Contact between abrasive particles and worn surfaces within rolling bearing**

**Контакт између абразивних честица и похабаних површина код котрљајних лежаја**

**III-2.** *dr Olivera Erić Cekić,* Innovation center, Faculty of Mechanical Engineering, University of Belgrade, Belgrade, Serbia, [olivera66eric@gmail.com](mailto:olivera66eric@gmail.com)  
*dr Dragan Rajnović, Prof. dr Lepasava Sidjanin, dr Sebastian Baloš*  
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**A review of as-cast and austempered ductile iron behaviour under cavitation conditions**

**Преглед понашања ливеног гвожђа и аустемперованог нодуларног лива у условима кавитације**

**III-3.** *dr Dragan Milković,* University of Belgrade-Faculty of Mechanical Engineering, Serbia,  
[dmilkovic@mas.bg.ac.rs](mailto:dmilkovic@mas.bg.ac.rs)  
*Prof. dr Goran Simić,* University of Belgrade-Faculty of Mechanical Engineering, Serbia,  
[gsimic@mas.bg.ac.rs](mailto:gsimic@mas.bg.ac.rs)

**Wheel-rail contact forces – experimental and computational approach**

**Силе у додиру точак–шина – експериментални и прорачунски приступ**

**III-4.** *mr sci. Marija Vukšić Popović,* College of Professional Railway Studies, Belgrade, Serbia  
[vuksicpopovic@bvcom.net](mailto:vuksicpopovic@bvcom.net)  
*mr sci. Saša Radulović,* University of Belgrade-Faculty of Mechanical Engineering, Serbia,  
[sasa.radulovic76@gmail.com](mailto:sasa.radulovic76@gmail.com)

**Contact mechanics of wheel/brake block on railway vehicles**

**Контактна механика склопа точак/кочница код железничких возила**

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**IV Session. The Round Table Discussion:**

**International Project Proposals - New trends in contact mechanics -**

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