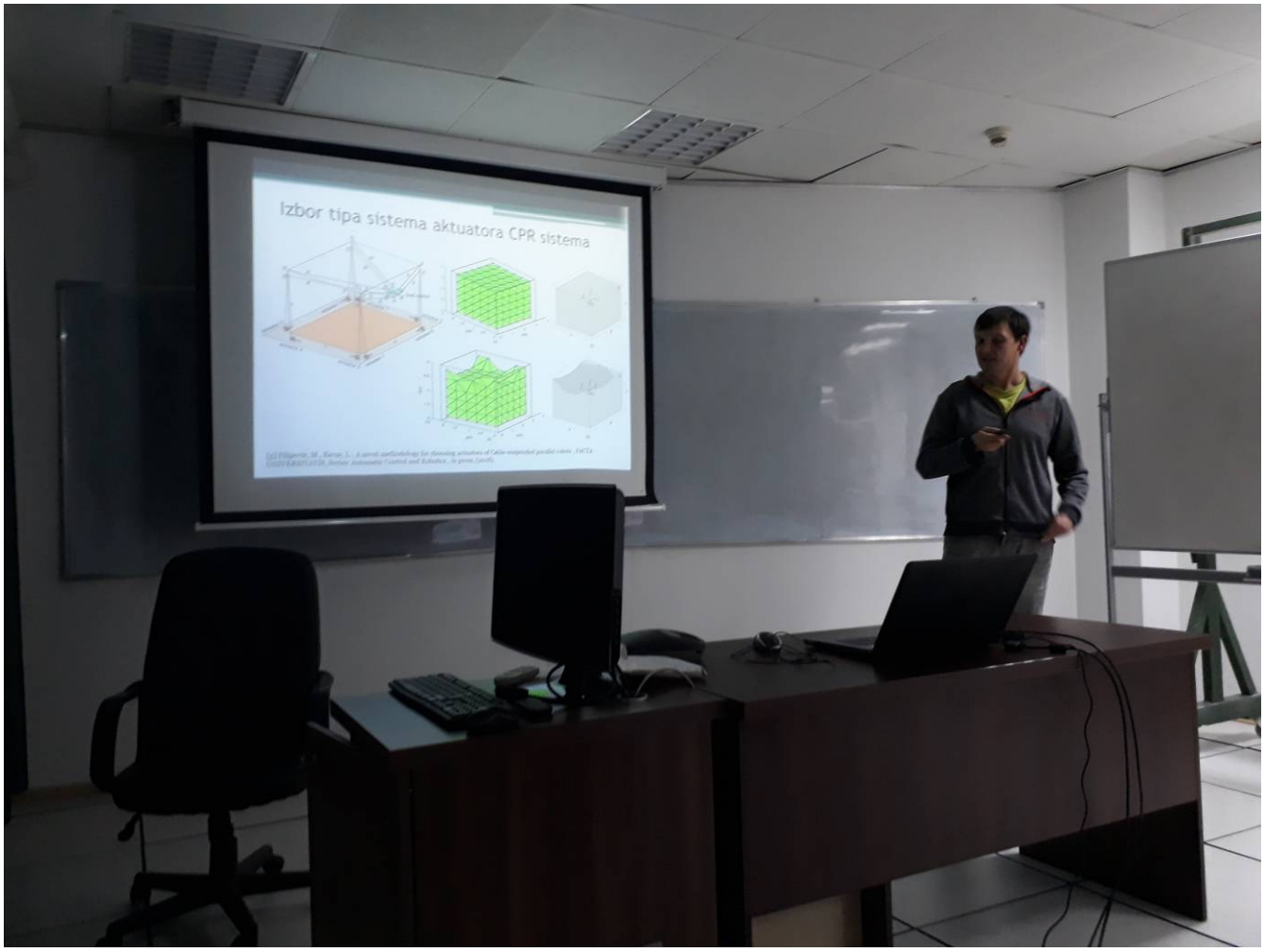
ФОТО ГАЛЕРИЈА

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

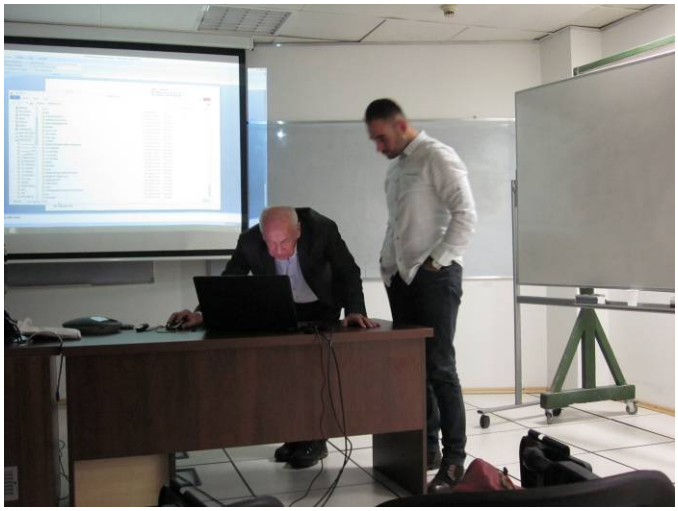
PRESENTATION OF THE RESEARCH RESULTS: PROJECT 174001 (2011-2018) DYNAMICS OF HYBRID SYSTEMS WITH COMPLEX STRUCTURES. MECHANICS OF MATERIALS
http://www.mi.sanu.ac.rs/novi_sajt/seminars/programs/seminar21.dec2018.php


Izbor tipa sistema aktuatora CPR sistema


ON 174001
"Dynamics of hybrid systems with complex structures. Mechanics of Materials" Report for 2011-2018


NOVI MODEL VIBRO-UDARNE DINAMIKE ZUPČANIKA –
Aproksimacija, Model vibro-udara kod zupčanika – Model centralnog centričnog sudara dva kotrljajuća fiktivna diska


ЛАБОРАТОРИЈА ЗА МЕХАНИКУ
И
НАУЧНО ИЗРАЧУНАВАЊЕ




Преглед основних тема истраживања
Установљавање прорачунских метода/процедура и развој софтвера за процену века елемената конструкција под дејством цикличних оптерећења константне амплитуде и општег спектра оптерећења
Установљавање прорачунских метода/процедура и развој софтвера за процену преосталог века ("Пројектовање са аспекта допуштених оштећења") елемената конструкција под дејством општег спектра оптерећења
Дефинисање оптерећења на лопатицама главног и репног ротора хеликоптера коришћењем ИВУД нумеричке симулације
Неки аспекти примене нумеричких метода на процену века елемената метал/композитних лопатица репног ротора хеликоптера
Неки аспекти испитивања лопатица главног и репног ротора хеликоптера
Авиони: статичке чврстоће и на замор лопатица репног ротора хеликоптера


Mathematical Institute SANU Belgrade
ON 0174001
"Dynamics of hybrid systems with complex structures. Mechanics of Materials" Report for 2011-2018


Seminar Mehanike mašina i mehanizama
- moderni i matematičke metode

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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The project has produced original scientific results in the following themes:

1. Elements of mathematical phenomenology and applications (in Mechanics, in nonlinear dynamics in general, in integration of scientific knowledge in reduction of number of models of dynamical systems).
2. Analytical mechanics of discrete fractional order systems; Derived a series of theorems.
3. Nonlinear and rare phenomena in dynamics of hybrid systems with coupled structures of rigid and deformable bodies; Transfer of energy through a system and subsystems; Synchronization of subsystems.
4. Models of biodynamical oscillators; Phenomenon of transfer of signals, information and energy through their complex structures; Oscillations of DNA helix chains and discrete continuum models of Zone Pelucida, a biomechanical oscillatory model of the mitotic spindle.
5. Mechanics of discrete continuum models. Dynamics of coupled structures of deformable bodies and discrete continuum layers with different constitutive relations: Linear elastic, nonlinear elastic, visco-elastic, hereditary and fractional order properties.
6. Phenomenon of dynamics of systems with friction and vibro-impact system; Theory of collision of rolling bodies; Dynamics of billiards.
7. Mechanics of damage and fracture.
8. Control of systems with delay and theorems of stability.
9. Continuation of doctoral research in accordance with scientific based themes by younger PhD students. 13 PhD students, younger than 30 years of age, are included in the project team and its scientific research. All of them were participants of the two year seminar. So far, 13 PhD students completed all courses at doctoral study programs; 11 candidates defender their doctoral dissertations.

Other topics considered in the framework of the project are: nonlinear transformation, rheonomic system, nonholonomic constraints, mass moment vectors, gyro-rotor dynamics, approximation, amplitude-frequency characteristic, stability, synchronization, theory of collision, vibro-impact system, dynamics of billiards, energy analysis, non-local theory and applications, biomechanical oscillators, control motion. The project collaborators participated in the conferences ENOC 2011, 2014 and 2017, IUTAM ICTAM 2012 and 2017, ESMC 2012 and 2018, EURODYN 2017, Mini-symposium Nonlinear Dynamics 2012, 2014, 2015 and 2017, etc. A member of the project was awarded EuroMech Young scientific prize Roma 2011. Number of Doctoral dissertations defended by members of Project team is 11.

with participations of the following researchers of the Team Project ON174001:
Following researchers of the Project team presented original scientific results in period 2011-2018:
dr Ivana Atanasovska
dr Sreten Stojanović i dr Dragutin Debeljković - Group presentation
dr Nataša Trišović
dr Ljubunko Kevac
dr Danilo Karličić, dr Milan Cajić, Nikola Nešić i Marija Stamenković -Atanasov - Group presentation
dr Anđelka Hedrih
dr Dragomir Zeković, dr Radoslav Radulović
dr Katarina i dr Stevan Maksimović
dr Marija Mikić i dr Julka Knežević Mijanović
doktorant Stepa Paunović
dr Julijana Simonović (postdoctoral study at Cardif University)

Without presentation:
dr Jelena Đoković i dr Slobodanka Boljanović
dr Ivica Čamagić i dr Srđan Jović – (Kosovska Mitrovixca activity)
dr Tomislav Petrović(Retaied), dr Ljiljana Veljović (Retaied)
Photo of the researchers:
Home page of the Project activities: http://www.mi.sanu.ac.rs/novi_sajt/research/projects/174001a.php.