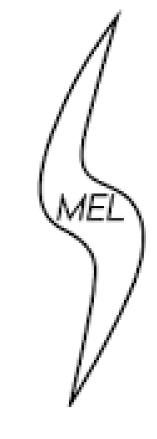


Politechnika Warszawska





9th Common PhD-Candidates Seminar

Warsaw September 23th-25th 2024

Programme

Monday, September 23th

10:05

Faculty of Automotive and Construction Machinery Engineering, 84 Ludwika Narbutta Street, 02-524 Warsaw, Room Multimedialna

9:00 Welcome

Vice-Dean for General Affairs of the Faculty Automotive and Construction Machinery Engineering Prof. Michał Hać

Session I Chairman: prof. von Wagner

Kamil Cichorek 9:05

Guidelines on the Applicability and Parametric Identification of the Pendulum Sloshing Model

9:25 **Tina Wieczorek**

Stress-Constrained Topology Optimization - Comparison and Evaluation of Different Constraints

9:45 **Pedro Jimenez-Soler**

Enhancing Aerial Robotics System Identification through Advanced Wavelet Techniques Adrian Połaniecki

Application of the DMEW Method for Testing the Injectors

10:25 End of session I

Coffee Break

Session II Chairman: prof. Jarzębowska

Michał Modzelewski 10:50

Analysis of Wavelet Transform Application in Aircraft Longitudinal Motion Identification

11:10 Frederik Rentzsch

Analysis of Large Datasets Measured on Non-Linear Oscillators for Application in Data-Driven Machine Learning

11:30 Mateusz Kukuryka

Nonlinear Model of Forces Acting on Spacecraft During Spool-First Boom Deployment

11:50 Lucca Schek

Modelling Micropolar Solids at Finite Strains

12:10 End of session II

Lunch

13:30 Visit Laboratory of Vehicles (SiMR)

Tuesday, September 24th

Faculty of Automotive and Construction Machinery Engineering, 84 Ludwika Narbutta Street, 02-524 Warsaw, Room Multimedialna

Session III Chairman: Prof. Müller

9:00 **Prof. Merten Stender**

Reservoir Computing: Using Nonlinear Dynamics for Machine Learning

Dr. Mateusz Żurawski 9:20

The Application of Artificial Neural Networks for Modelling the Adaptive Mechanical System

Adam Chełchowski 9:40

Reinforcement Learning Based Steering and Control

Maciej Słomczyński 10:00

Control Methods for Nonlinear Systems with Examples of Backstepping and SMC in use for Vehicles

10:20 End of session III

Coffee break

Session IV Chairman: prof. Makowski

Dr. Piotr Bartkowski 10:40

SMaRT-lab - Flexible Laboratory of the Future

Siddhi Chevale, Łukasz Pawliszak, Dr. Piotr Bartkowski 11:00

Flexible Permanent Magnets for Soft Robotics Agata Lusawa, Łukasz Pawliszak, Dr. Piotr Bartkowski 11:20

Flexible Electrical Energy Storage for Wearable Electronics 11:40

Sabina Sypniewska, Jonathan Ruiz Lu, Łukasz Pawliszak, Dr. Piotr Bartkowski Electrical Energy Storage Structure with Variable Stiffness

12:00 End of session IV

Lunch

14:00 **Visit Old Town**

Wednesday, September 25th

Faculty of Power and Aeronautical Engineering, 24 Nowowiejska Street, 00-665 Warsaw

Visit Laboratory of Aerodynamics (MEiL) 9:30

11:00 Farewell

End of seminar