



# **CMSE – 2025**

June 12, 2025



Kyiv, Ukraine

In-person

# Committees

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**Prof. Borys Kuznetsov**, *Anatolii Pidhornyi Institute of Mechanical Engineering Problems of the National Academy of Sciences of Ukraine, Kharkiv, Ukraine*

# WORKSHOP SCHEDULE

June 12, 2025

Start at 13:00 (GMT+3)

Conference time: 13:00 – 17:00

Coffee break: 15.00-15:30

Academic Building 20, room 407

*Moderator – Roman Voliansky*

## 1. Duffing pendulum model in the non-orthogonal coordinates

*Nina Volianska (Taras Shevchenko National University of Kyiv, Ukraine),*

*Oleksiy Sinkevych (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Andri Pranolo (Ahmad Dahlan University, Indonesia)*

## 2. An eye on circuit simulation of partial discharge detection system

*Yevhenii Trotsenko (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Julia Peretyatko (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Yaroslav Haran (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Olexandr Protsenko (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine)*

*Andri Pranolo (Ahmad Dahlan University, Indonesia)*

## 3. Perturbed motion of two coupled duffing pendulums

*Roman Volianskyi (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Nina Volianska (Taras Shevchenko National University of Kyiv, Ukraine),*

*Aji Prasetya Wibawa (State University of Malang, Indonesia)*

## 4. Simulation of static operating modes of self-excited induction generator taking into account nonlinearity of the magnetic system

*Mykola Pushkar (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Nataliia Krasnoshapka (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Hanna Zemlianukhina (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Vasyl Budko (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine),*

*Aji Prasetya Wibawa (State University of Malang, Indonesia)*

*Serhii Burian (National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», Ukraine)*

5. Optimization of the electrical networks reconstruction strategy by the criterion of functioning quality

*Petro Lezhniuk (Vinnytsia National Technical University, Ukraine),*

*Viacheslav Komar (Vinnytsia National Technical University, Ukraine),*

*Olena Sikorska (Vinnytsia National Technical University, Ukraine),*

*Volodymyr Netrebsky (Vinnytsia National Technical University, Ukraine),*

*Oleksandr Buryak (Vinnytsia National Technical University, Ukraine),*

*Aji Prasetya Wibawa (State University of Malang, Indonesia)*

6. Computational method for researching turbulent velocity head in wind tunnel

*Oleksander Zhdanov (State University “Kyiv Aviation Institute”, Ukraine),*

*Victor Dehtiarov (State University “Kyiv Aviation Institute”, Ukraine),*

*Olha Sushchenko (State University “Kyiv Aviation Institute”, Ukraine)*

7. Effective mission planning for fixed-wing unmanned aerial vehicle

*Ivan Ostroumov (State University “Kyiv Aviation Institute”, Ukraine),*

*Daria Tkachuk (State University “Kyiv Aviation Institute”, Ukraine),*

*Olena Kyzymchuk (ITM Technische Universität Dresden, Germany)*

8. Automated system for maintaining a set engine speed

*Mykola Yeremiyev (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Dmytro Krytskyi (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Oleksii Popov (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Andry Bykov (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Sergiy Karatanov (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Elvira Kaidan (National Aerospace University "Kharkiv Aviation Institute", Ukraine)*

9. Adaptive algorithm for visual positioning of UAVs in the local environment

*Kostiantyn Dergachov (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Oleksii Hurtovyi (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Elshan Hashimov (Azerbaijan Technical University, Azerbaijan)*

10. Computational technology for uncertain spacecraft magnetic cleanliness control

*Borys Kuznetsov (Anatolii Pidhornyi Institute of Power Machines and Systems of the National Academy of Sciences of Ukraine, Ukraine),*

*Ihor Bovdui (Anatolii Pidhornyi Institute of Power Machines and Systems of the National Academy of Sciences of Ukraine, Ukraine),*

*Tatyana Nikitina (V.N. Karazin Kharkiv National University, Ukraine),*

*Konstantin Chunikhin (Anatolii Pidhornyi Institute of Power Machines and Systems of the National Academy of Sciences of Ukraine, Ukraine),*

*Olena Voloshko (Anatolii Pidhornyi Institute of Power Machines and Systems of the National Academy of Sciences of Ukraine, Ukraine),  
Valeriy Kolomiets (V.N. Karazin Kharkiv National University, Ukraine),  
Inna Nefodova (V.N. Karazin Kharkiv National University, Ukraine),  
Borys Kobylanskyi (V.N. Karazin Kharkiv National University, Ukraine)*

11. Computational technology for uncertain extended energy-saturated objects magnetic silence control

*Ihor Boydui (Anatolii Pidhornyi Institute of Power Machines and Systems of the National Academy of Sciences of Ukraine, Ukraine),*

*Borys Kuznetsov (Anatolii Pidhornyi Institute of Power Machines and Systems of the National Academy of Sciences of Ukraine, Ukraine),*

*Tatyana Nikitina (V.N. Karazin Kharkiv National University, Ukraine),*

*Konstantin Chunikhin (Anatolii Pidhornyi Institute of Power Machines and Systems of the National Academy of Sciences of Ukraine, Ukraine),*

*Olena Voloshko (Anatolii Pidhornyi Institute of Power Machines and Systems of the National Academy of Sciences of Ukraine, Ukraine),*

*Borys Kobylanskyi (V.N. Karazin Kharkiv National University, Ukraine),*

*Valeriy Kolomiets (V.N. Karazin Kharkiv National University, Ukraine),*

*Inna Nefodova (V.N. Karazin Kharkiv National University, Ukraine)*

12. Method for optimizing connection schemes for energy storage devices, taking into account restrictions imposed by the distribution system operator

*Volodymyr Kulyk (Vinnytsia National Technical University, Ukraine),*

*Vira Teptia (Vinnytsia National Technical University, Ukraine),*

*Stanislav Andrushko (Vinnytsia National Technical University, Ukraine),*

*Yunifa Miftachul Arif (Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia)*

13. Robust segmented regression with heteroscedasticity based on moving triangle

*Valeriy Kuzmin (State University "Kyiv Aviation Institute", Ukraine),*

*Maksym Zaliskyi (State University "Kyiv Aviation Institute", Ukraine),*

*Onyedikachi Chioma Okoro (Vamoose Technologies, Canada)*

14. The model for assessing currency dynamics in times of financial turbulence: empirical evidence from the U.S. Dollar, gold and cryptocurrencies

*Olena Borzenko (SO "Institute for economics and forecasting of NAS of Ukraine"),*

*Anna Hlazova (SO "Institute for economics and forecasting of NAS of Ukraine"),*

*Zarina Poberezhna (State University "Kyiv Aviation Institute", Ukraine),*

*Lesya Pobochenko (State University "Kyiv Aviation Institute", Ukraine),*

*Alina Prokopieva (State University "Kyiv Aviation Institute", Ukraine)*

15. Optimal algorithm of SAR raw data processing for radar cross section estimation

*Volodymyr Pavlikov (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Valerii Volosyuk (National Aerospace University "Kharkiv Aviation Institute", Ukraine),*

*Simeon Zhyla (National Aerospace University "Kharkiv Aviation Institute", Ukraine),  
Kostiantyn Dergachov (National Aerospace University "Kharkiv Aviation Institute",  
Ukraine),  
Olena Havrylenko (National Aerospace University "Kharkiv Aviation Institute", Ukraine),  
Yuliya Averyanova (State University "Kyiv Aviation Institute", Ukraine),  
Ivan Ostroumov (State University "Kyiv Aviation Institute", Ukraine)*

16. Leveraging satellite data to support decision-making on forest disturbances in “Skole  
Beskids” National Nature Park

*Oleh Chaskovskyy (Institute of Computer Science and Information Technologies, Ukrainian  
National Forestry University, Ukraine),  
Serhii Havryliuk (Institute of Forestry and Park Gardening, Ukrainian National Forestry  
University, Ukraine).  
Oleksiy Sinkevych (Institute of Computer Science and Information Technologies, Ukrainian  
National Forestry University, Ukraine),  
Andriy Nechepurenko (Institute of Computer Science and Information Technologies,  
Ukrainian National Forestry University, Ukraine),  
Oksana Pelyukh (Ukrainian National Forestry University, Ukraine),  
Mykola Rozumovskyi (Institute of Computer Science and Information Technologies,  
Ukrainian National Forestry University, Ukraine)*

Authors are expected to make oral reports using their presentations. Durations for the reports are as follows:

- presentation up to 15 minutes;
- discussion up to 5 minutes.

The presentations will be recorded. Papers not presented at the conference will not be submitted for indexing.

All times is local Ukrainian time (GMT+3).

Location: National Technical University of Ukraine «Igor Sikorsky Kyiv polytechnic institute», 37, Prospect Beresteiskyi, Kyiv, Ukraine

Geolocation code:

# CFW6+Q68 Kyiv

**ATTENTION:** Due to the high risk of missile attacks workshop may be interrupted for duration of alarm in Kyiv region. Participants of CMSE have to follow rules, given by moderator to relocate to a secured safety area. Workshop schedule will be recovered in 10 min after alarm is off.

