



TO THE TENTH ANNIVERSARY OF THE FACULTY OF INFORMATION TECHNOLOGY

**TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV
(FACULTY OF INFORMATION TECHNOLOGY,
FACULTY OF COMPUTER SCIENCE AND CYBERNETICS)
NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
"IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE"
VIKTOR GLUSHKOV INSTITUTE OF CYBERNETICS OF THE NAS OF UKRAINE
INSTITUTE OF INFORMATION TECHNOLOGY AND LEARNING TOOLS
OF THE NAES OF UKRAINE
INSTITUTE FOR INFORMATION RECORDING OF THE NAS OF UKRAINE
INSTITUTE OF SOFTWARE SYSTEMS OF THE NAS OF UKRAINE**

PROGRAM
Dynamical System Modeling and
Stability Investigation
DSMSI-2023
December 19-21, 2023



Contact details

Adress:

Taras Shevchenko National University of Kyiv, Kyiv

- 24 B. Gavrilishyna St., Faculty of Information Technology;
- 4d Akademika Glushkova Ave., Faculty of Computer Science and Cybernetics

E-mail:

Tel.: +380 66 4305432



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CONFERENCE TIMETABLE



Tuesday, December 19, 2023

Plenary sessions 11:00 – 13:10
Track sessions 13:30 – 15:00

Wednesday, December 20, 2023

Track sessions 11:00 – 13:00

Thursday, December 21, 2023

Conference closing 11:00 – 13:00



CONFERENCE PROGRAMME



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December

Tuesday

OPENING OF THE CONFERENCE (11:00 – 11:10)

PLENARY SESSIONS (11:10 – 13:00) Moderator O.Bychkov

Link: <https://knu-ua.zoom.us/j/9128538578?pwd=b1VtTFNvUUM5YXZzUzYxcUdURE1iQT09>

(11:10 – 11:40)

Mykhaylo Petryk, Igor Cherevko; Svitlana Ilika (Yuriy Fedkovych Chernivtsi National)
Approximation of systems with delay and their application

(11:40 – 12:10)

A.G. Mazko (Institute of Mathematics NAS of Ukraine) *Equivalent transformation and weighted H^∞ -optimization of linear descriptor systems.*

(12:10 – 12:40)

Andriy Shatyrko, Denys Khusainov (Taras Shevchenko National University of Kyiv)
Simulation the impact of time-delay in Richardson arms race models

(12:40 – 13:10)

Oleksii S Bychkov, Anna Martsafei, George Dimitrov (Taras Shevchenko National University of Kyiv) *Theory of possibilities. Modern aspects..*

COFFEE BREAK (13:10 – 13:30)

20*December***Wednesday****December, 20, 2023****Tracks 1:****Computer applied mathematics;****Link:****Chairs: Andrii Shatyрко****Secretary:**

1.	(11:00 – 11:15) Felix Sadyrbaev, Olga Kozlovska	Example of chaotic behavior in systems of ordinary differential equations arising in modeling of gene regulatory networks
2.	(11:15 – 11:30) Vladimir Semenov, Oleh Kharkov	The Regularized Operator Extrapolation Algorithm for Variational Inequalities
3.	(11:30 – 11:45) Peter Benner, Sergey Chuiko, Viktor Chuiko	Adomian decomposition method in the theory of nonlinear periodic boundary value problems with delay
4.	(11:45 – 12:00) Andrii Anikushyn, Oleksandra Zhyvolovych	Well-posedness of a Dirichlet problem for an integro-differential equation with a small time derivative coefficient
5.	(12:00 – 12:15) Denys Khusainov, Olga V. Nesmelova, Sergey Chuiko, Daria Diachenko	A nonlinear autonomous boundary value problem for a non-degenerate differential-algebraic system
6.	(12:15 – 12:30) Vladimir Matvienko, Valentyn Sobchuk, Garashchenko, Fedir Volodymyr Pichkur, Evgen Demkivskiy	Adaptive Method Approximation of Experimental Data

Tracks 2:**Mathematical foundations of information technologies.****Link:**<https://knu-ua.zoom.us/j/9128538578?pwd=b1VtTFNvUUM5YXZzUzYxcUdURE1iQT09>**Chairs: Oleksii Bychkov****Secretary: Volodymyr Petrivskiy**

1.	(11:00 – 11:15) Pavel Petrov, Yaroslav Petrivskiy, Volodymyr Petrivskiy, Mykhailo Tymchuk	Regularity of Geotechnological Formation of the Area of Weakened Connections in the Rock Mass
2.	(11:15 – 11:30) Victor Kulian, Olena Yunkova, Maryna Korobova	Diversification of stock portfolio structure under market restrictions

3.	(11:30 – 11:45) Oleg Kurchenko, Serhii Kulibaba, Liudmyla Zubyk	Control Actions Using Voice and Gestures at the Level of the Operating System
4.	(11:45 – 12:00) Miroslava Ruzickova, Irada A. Dzhalladova, Oleg Kaminsky, Oleksandr Bartash, Arsen Pavlov	AI and LLM models to analyze and identify Cybersecurity incidents
5.	(12:00 – 12:15) Serhii V Denysov, Vladimir Semenov	Optimizing network economics problem with adaptive algorithms for variational inequalities
6.	(12:15 – 12:30) Oleksii Bychkov, Liudmyla Zubyk, Dmytro Gololobov, Yaroslav Isaienkov, Ganna Grynkevych, Anastasiia Ivanytska	The system for recognizing useful information of the client's ID-card based on machine learning technologies
7.	(12:30 – 12:45) Hermann Schloss Gennadiy Poryev	A Method of Differential Measurement to Locate the Sound Event Epicenter
8	(12:45 – 13:00) Nikolay Kiktev, Oleksiy Opryshko, Alla Dudnyk, Volodymyr Reshетиuk	Learning for Remote Monitoring of Agricultural Fields with Explosive Tunnels
9	(13:15 – 13:30) Oleksiy Oletsky, Victor Kulian, Maryna Korobova, Olena Yunkova	Diversification of Stock Portfolio Structure under Market Restrictions

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December

Thursday

December, 21, 2023

Tracks 1:

Computer applied mathematics;

Link:

Chairs: **Andrii Shatyрко**

Secretary:

1.	(11:00 – 11:15) Ievgen Zaitsev Oleksandr Golubenko, Olha Tkachenko, Oleksandr Pidmohylnyi, Artem Antonenko	Exploring advanced hypothesis generation in astronomy through the implementation of a mathematical model of linguistic neural networks
2.	(11:15 – 11:30) Yuri Mikhlin	Regular and complex behaviour in the pendulum system under a magnetic field
3.	(11:30 – 11:45) Sergey Dashkovskiy, Oleksandr Boichuk, Oleksandr Pokutnyi, Olena Polishchuk	Weak chaos and controllability conditions in discrete systems

4.	(11:45 – 12:00) Stepan S. Shkilniak, Oksana Shkilniak	Modal Logics of Partial Quasiary Predicates with Equality
5.	(12:00 – 12:15) Dmytro Cherniy, Vladimir Matvienko, Volodymyr Pichkur	Computational technologies for modeling hydrodynamic processes in regions with various types of moving boundaries
6.	(12:15 – 12:30) Oleg Limarchenko	Manifestation of nonlinear mechanisms in the problem of vibrational disturbance of structures with free-surfaced liquid
7.	(12:30 – 12:45) Olena Liashenko, Tetyana Kravets, Vadym Proshchenko	Dynamic Rebalancing of Cryptocurrency Portfolio Based on Forecasted Technical Indicators and Random Forest Method
8	(12:45 – 13:00) Iryna Yurchuk, Anna Pylypenko	Quantile-Based Statistical Techniques for Anomaly Detection
9	(13:00 – 13:15) Oleg Barabash, Andrii Musienko, Andriy Makarchuk, Mykola Myroniuk, Tetiana Fedchuk	Approximation Properties of Generalized Hölder Classes in Context of Signal Processing
Tracks 2: Mathematical foundations of information technologies.		
Link: https://knu-ua.zoom.us/j/9128538578?pwd=b1VtTFNvUUM5YXZzUzYxcUdURE1iQT09		
Chairs: Oleksii Bychkov Secretary: Volodymyr Petrivskyi		
1.	(11:00 – 11:15) Serhii Toliupa, Anna Pylypenko, Oleh Tymchuk, Oleksii Kohut	Simulated Datasets Generator for Testing Data Analytics Methods
2.	(11:15 – 11:30) Kateryna Merkulova, Yelyzaveta Zhabska, Ivan V Ivanenko	Software for UAV Images Processing for Object Identification
3.	(11:30 – 11:45) Bohdan Pavliukh, Kateryna Merkulova	Use of Convolutional Neural Networks for Identifying Additional Features on a Digital Image of Human Face
4.	(11:45 – 12:00) Tetiana Kovaliuk, Kseniia Dukhnovska, Oksana Kovtun, Anastasiia Nikolaienko, Iryna Yurchuk	Text classification using term co-occurrence matrix
5.	(12:00 – 12:15) Natalia Korshun, Olha Tkachenko, Ivan Myshko	Automation and Management in Operating Systems: The Role of Artificial Intelligence and Machine Learning
6.	(12:15 – 12:30) Nikolay Kiktev, Taras Lendiel, Maryna Lendiel	Design of a Data Warehouse for a Dynamic Greenhouse Control System
7	(12:30 – 12:45) Oleksii Bychkov, Oleksandr Gezerdava, Kseniia Dukhnovska, Oksana Kovtun, Olga Leshchenko	Medical Card Information System for Data Analysis from Fitness Bracelets

CLOSING OF THE CONFERENCE

