



## THE FIFTEENTH INTERNATIONAL SCIENTIFIC-PRACTICAL CONFERENCE “Mathematical Modeling and Simulation of Systems. MODS'2020”

*June 29 – July 01 2020, Ukraine, Chernihiv*

Dear Colleagues,

We invite you to participate in the scientific-practical conference, which is the part of events to implement the Law of Ukraine "About national Program of Informatization" and the plan of scientific and organizational events of the National Academy of Sciences and Ministry of Education and Science of Ukraine.

### ORGANIZERS

- ❑ Ministry of Education and Science of Ukraine
- ❑ The National Academy of Sciences of Ukraine
- ❑ Academy of Technological Sciences of Ukraine
- ❑ Engineering Academy of Ukraine
- ❑ State Scientific Research Institute of Armament and Military Equipment Testing and Certification, Ukraine
- ❑ Glyndwr University, Wrexham, UK
- ❑ US Army Research Laboratory, USA
- ❑ Defence Institute of Tsvetan Lazarov, Bulgaria
- ❑ Lodz University of Technology, Poland
- ❑ Riga Technical University, Latvia
- ❑ Tallinn University of Technology, Estonia
- ❑ University of Extremadura, Badajoz, Spain
- ❑ Francysk Scoryna Gomel State University, Belarus
- ❑ Institute of Mathematical Machines and Systems Problems of the NASU
- ❑ Keldysh Institute of Applied Mathematics of the RAS, Moscow, Russia
- ❑ National Technical University of Ukraine "Kyiv Polytechnic Institute"
- ❑ Yuriy Kondratiyuk Poltava National Technical University, Ukraine
- ❑ The Bohdan Khmelnytsky National University of Cherkasy, Ukraine
- ❑ Chernihiv National University of Technology, Ukraine

### PARTNER



«S&T Ukraine», Kyiv, Ukraine

### PURPOSE OF THE CONFERENCE

Exchange of experience in research, organizational, scientific and practical work on:

- ❑ modern aspects of mathematical modeling and simulation of systems in ecology, GIS;
- ❑ modern aspects of mathematical modeling and simulation of systems in manufacturing;
- ❑ modern aspects of mathematical modeling and simulation of systems in information technology;
- ❑ modern aspects of mathematical modeling and simulation of systems in project management.

### PROGRAM COMMITTEE

#### CO-CHAIRMEN:

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### ORGANIZING COMMITTEE

#### CHAIRMAN

Igor Skiter – PhD (Phys.-Math.), As. prof.

#### CO-CHAIRMAN

Igor Brovchenko – D.Sc.

#### SECRETARIES:

Alla Hrebennyk, Mariia Voitsekhovska

#### ORGANIZING COMMITTEE MEMBERS:

Valentyn Nekhay, Ivan Burmaka, Alexandr Dryzhynin

### PROGRAM COMMITTEE MEMBERS:

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### TOPICS OF THE CONFERENCE

- ❑ Methods of mathematical modeling and simulation
- ❑ Tools of mathematical modeling and simulation

- ❑ Mathematical modeling and simulation of systems in ecology, geology, manufacturing, information technologies, project management
- ❑ Modeling, analysis and tools of safety in distributed information systems
- ❑ Mathematical modeling and simulation of special purpose equipment samples

## IMPORTANT DATES OF THE CONFERENCE

- ~~April 03~~ April 17 – the last day to submit papers for Springer.
- May 08 – the last day for final manuscript submission.
- June 01 – the last day to submit abstracts of reports.
- June 01 – the last day to payment transfer for participation in the conference.
- June 29 – arrival of participants to CNUT, Chernihiv, registration, plenary session, work in sections.
- June 30 – work in sections, closing of the conference.
- July 01 – excursion, leaving of participants from CNUT, Chernihiv.

## PUBLICATIONS OF REPORTS AND OFFICIAL LANGUAGES OF THE CONFERENCE

Selected *Papers* based on the reports, and presented during the conference, will be published in the "Advances in Intelligent Systems and Computing" (ISSN: 2194-5357) journal by Springer. Papers language is English (USA) only. Requirements for papers on <https://www.springer.com/us/authors-editors/conference-proceedings/conference-proceedings-guidelines>

Papers that will not be selected to AISC will be recommended for publication in the CNUT "Technical Sciences and Technology" journal, included to the list of the Higher Attestation Commission of Ukraine. Requirements for arrangement of papers for publication in the journal <http://tst.stu.cn.ua/?task=page&l=ua&id=1>

*Abstracts of reports* will be published in the conference proceedings prior to the conference. Official languages of the conference are English, Ukrainian, and Russian.

## SUBMISSION OF PROCEEDINGS

*Papers* for Springer should be submit through EasyChair <https://easychair.org/conferences/?conf=mods2020>

*Proceedings (abstracts of reports)* should be download (file \*.doc MS Word) with Registration Form on [mods.stu.cn.ua](https://mods.stu.cn.ua) with notification to e-mail [mods.ipmms@gmail.com](mailto:mods.ipmms@gmail.com) (a copy to [grebennik.alla@gmail.com](mailto:grebennik.alla@gmail.com)).

**Requirements to arrangement of proceedings:** text, graphics and formulas (MS Equation 3.0); page parameters – paper size A5 with margins up and down 2 cm, left 2.5 cm, right 1.5 cm, Times New Roman font, size 10, line interval – 1,0. In the upper left corner indicate UDC. Title of the report (big "bold" letters) is in the center, on the next line are initials and surnames of authors, further there is a name of the institution (in italics), after a free line the text of the report begins. The abstract should not exceed four (4) pages size A5.

*Example of an abstract*

UDC 517.957

### MATHEMATICAL MODELING OF DYNAMICS OF POPULATION DEVELOPMENT

V.G. Malenko

*Institute for Applied System Analysis, Ukraine*

The problem of population dynamics is central to ecological studies. For a more adequate description of population dynamics one must take into consideration heterogeneity of individuals' properties, particularly the age-old structure.

A simpler example of a structured model for age is a von Foerster's linear model [1]. It looks like this:

$$\frac{\partial \tilde{\varphi}}{\partial t} = r \left[ \frac{g}{\omega} \nabla \tilde{Q} - 2\tilde{U} \cdot \nabla \tilde{\varphi} - \gamma_d \tilde{\varphi} \right], \quad (1)$$

## Literature

A. Von Foerster H. Some remarks on changing populations // Kinetics of Cellular Proliferation. - New-York: Grune and Stratton, 1959. - P. 382 - 407.

## CONFERENCE FEES

Participants from Ukraine: **350 UAH** (part-time participation) and **700 UAH** (full-time participation).

Participants from other countries: **30 EUR** (part-time participation) and **60 EUR** (full-time participation).

Organizing fee for the conference includes organizational expenses, excursion and catering (for full-time participants), mailing of the conference proceedings (for part-time participants). Payment of the organizing fee can be made by requisites indicated below **till June 01, 2020**, or directly during the registration, in preliminary agreement with the organizing committee.

After payment authors are asked to send scanned copy of payment receipt to the following e-mail [mods.ipmms@gmail.com](mailto:mods.ipmms@gmail.com) with "MODS'2020 Conference Fee payment" in attachment.

### Organizing Committee Address:

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### Payment requisites:

Chernihiv National University of Technology,  
p/a [UA678201720313271001202006996](https://ua678201720313271001202006996)

Payment purpose: org.fee for participation in the  
conference MODS'2020

### Official site of the conference:

<https://mods.stu.cn.ua>

**For participants from other countries there is a possibility to make a transfer by Western Union; PrivatMoney: SKITER IGOR (tel.: +38 067 278 06 42)**