



# THE TWELFTH INTERNATIONAL SCIENTIFIC-PRACTICAL CONFERENCE

# "Mathematical Modeling and Simulation of Systems. MODS'2017" 26-29 June 2017, 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
- ☐ Glyndwr University, Wrexham, UK
- □ 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 Kondratiyk Poltava National Technical University
- ☐ Chernihiv National University of Technology

# 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;
- modern aspects of mathematical modeling and simulation of systems in manufacturing;
- modern aspects of mathematical modeling and simulation of systems in information technology;

## PROGRAM COMMITTEE

### CO-CHAIRMEN:

Borovin G.K., D.Sc. (Phys.-Math.), Russia Vasiliev A.I., D.Sc. (Econ.), Ukraine Dmitri Vinnikov, Dr.Sc., Estonia Ilya Galkin, Dr.Sc.Ing., prof., Latvia Demidenko O.M., D.Sc., prof., Belarus John Davies, prof., U.K.

Ireneusz Zbiciński Ph.D., D.Sc, prof., Poland

Morozov A.A., corresponding member of the NASU, Ukraine

Onishchenko V.A., D.Sc. (Econ.), prof., Ukraine Enrique Romero-Cadaval, Dr.Sc., prof., Spain Shkarlet S.N., D.Sc. (Econ.), prof., Ukraine

# ORGANIZING COMMITTEE

**CHAIRMAN** 

Kazymyr V.V. – D. Sc., prof.

SECRETARIES:

Voitsekhovska M., Zhitnick O.

#### ORGANIZING COMMITTEE MEMBERS:

Nekhay V., Posadska A., Posadska I., Kryshchenko M., Mykhailiuk I., Lytvyn O.

# PROGRAM COMMITTEE MEMBERS:

Adamchuk V.V., D.Sc., prof., member of NAASU; Azarov O.D., D.Sc., prof.; Verlan A.F., Dr. Sc., prof.; Voloshyn O.F., Dr. Sc., prof.; Gitis V.B., Ph.D; Golub S.V., D.Sc., prof.; Golubev Y.F., D.Sc., prof.; Gorban I.I., Dr. Sc., prof.; Gryshko V.V., D.Sc. (Econ.), prof.; Zhelezniak M.Y., PhD; Janis Zakis, Dr.Sc.Ing.; Kazymyr V.V., D.Sc., prof.; Kharchenko V.S., D.Sc., prof.; Klimenko V.P., D.Sc., prof.; Kovalevskyi S.V., D.Sc., prof.; Kovalets I.V., D.Sc.; Kostogryzov A.I., D.Sc., prof.; Kraskevych V.E., D.Sc., prof.; Lytvynov V.V., D.Sc., prof.; Liakhov O.L., D.Sc., prof.; Maderych V.S., D.Sc., Myronenko V.G., D.Sc., prof., member of NAASU; Mozharovskiy V.V., D.Sc., prof.; Sagayda P.I., Ph.D; Snytiuk V.E., D.Sc., prof.; Stetsenko I.V., D.Sc., prof.; Tarasenko V.P., D.Sc., prof.; Tarasov O.F., D.Sc., prof.; Tomashevskiy V.M., D.Sc., prof.

# TOPICS OF THE CONFERENCE

- ☐ Methods of mathematical modeling and simulation
- ☐ Tools of mathematical modeling and simulation
- □ Mathematical modeling and simulation of systems in ecology, manufacturing, information technologies
- ☐ Model-oriented control of technological processes and organizational systems

#### IMPORTANT DATES OF THE CONFERENCE

- 10 June the last day to submit abstracts and application forms for participation in the conference.
- 10 June the last day to transfer of payment for participation in the conference.
- 26 June arrival of participants to Chernihiv, registration and plenary session.
- 27 June work in sections, excursion to vil. Sedniv.
- 28 June rafting along the Desna River.
- 29 June closing of the conference, plenary session.

# PUBLICATIONS OF REPORTS AND OFFICIAL LANGUAGES OF THE CONFERENCE

Abstracts of reports will be published in the conference proceedings prior to the conference.

Articles based on the reports, presented during the conference, will be published in the journal of IMMS "Mathematical Machines and Systems" or in the journal of Chernihiv National University of Technology "Technical sciences and technology", which are included to the list of HAC of Ukraine.

Official languages of the conference are Ukrainian, Russian, English.

#### SUBMISSION OF REPORT'S ABSTRACTS

Abstracts of reports should be sent in electronic form (<u>file</u> \*. rtf or \*. doc MS Word) by e-mail to the address <u>mods.ipmms@gmail.com</u> (a copy to m.voitsekhovska@gmail.com) or on CD by regular mail to the address of the Organizing Committee.

**Requirements to arrangement of abstracts:** text, graphics and formulas (MS Equation 3.0); page parameters – paper size A5 with indents 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.

UDC 517.957

Example of a abstract

#### 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:

$$\frac{\partial \widetilde{\varphi}}{\partial t} = r \left[ \frac{g}{\omega} \nabla \vec{Q} - 2\vec{U} \cdot \nabla \widetilde{\varphi} - \gamma_d \widetilde{\varphi} \right], \tag{1}$$

#### Literature

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

**Requirements for arrangement of articles** for publication in the journal "Mathematical Machines and Systems" are presented here: <a href="http://www.immsp.kiev.ua/publications/rules.html">http://www.immsp.kiev.ua/publications/rules.html</a> and in the Journal of CNUT <a href="http://tst.stu.cn.ua/?task=page&l=ua&id=1">http://tst.stu.cn.ua/?task=page&l=ua&id=1</a>

# PROCESS OF APPLICATION FOR PARTICIPATION AND PAYMENT

Information (name, name of the institution, tel. / fax, e-mail, title of the report, form of participation) concerning applications for participation in the conference will be accepted by the conference organizing committee by e-mail till 10 June, 2017.

#### **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 (publishing the conference proceedings), excursion program including a one-day rafting along the Desna River (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 10 June, 2017**, or directly during the registration, in preliminary agreement with the organizing committee.

After payment authors are asked to send scanned copy of receipt to the following e-mail <a href="mods.ipmms@gmail.com">mods.ipmms@gmail.com</a> with "MODS'2017 Conference Fee payment" in subject.

# **Organizing Committee Address:**

Chernihiv National University of Technology, 95, Shevchenko str., Chernihiv, 14027, Ukraine Telephone, email:

 $+38\ 046\ 223\ 28\ 41 \\ +38\ 063\ 33\ 84\ 888$ 

mods.ipmms@gmail.com m.voitsekhovska@gmail.com

# Payment requisites:

Chernihiv National University of Technology, Code 05460798 STSU in Kyiv IFO 820172 p/a 31251264206996

Payment purpose: org.fee for participation in the conference MODS'2017.

# Official sites of the conference:

http://www.immsp.kiev.ua/conferences, http://stu.cn.ua/news\_view/2456/

For participants from other countries there is a possibility to make a transfer by Western Union; PrivatMoney: POSADSKAJA ALINA (tel.: +380 66 254 23 94)