

The 3rd RUSSIAN-MONGOLIAN CONFERENCE FOR YOUNG SCIENTISTS ON MATHEMATICAL MODELING, COMPUTING TECHNOLOGIES AND CONTROL

June 23 –30 2015, Irkutsk (Russia) – Kankh (Mongolia)

Organizers

Matrosov Institute for System Dynamics and Control Theory SB RAS
Institute of Control Sciences RAS
Institute of Computational Technologies SB RAS
Institute of Computational Modeling SB RAS
Computer Center FEB RAS
Special Designing and Technological Bureau “Nauka” SB RAS
Mongolian University of Science and Technology
Institute of Informatics of Mongolian Academy of Sciences

The main goal of the Conference is to bring together young scientists and students working in the fields of computational and applied mathematics, computer science, and mathematical modeling for continuum mechanics, physics, chemistry, geology, biology, economics, ecology, and human sciences. The program of the conference includes lectures by leading scientists and short talks delivered by young participants.

Topics

- modern application program packages;
- dynamics, control and stability;
- modeling of medical social and ecological social systems;
- nonconvex extremal problems;
- application of GIS and WEB technologies to scientific research.

Scientific Committee

Academician I.V. Bychkov (Russia) – co-chair

Professor B. Tsogoo (Mongolia) – co-chair

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Corresponding member of RAS V.V. Shaidurov (Russia, Krasnoyarsk)	Professor I.A. Finigenko (Russia, Irkutsk)
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Academician N.T. Danaev (Kazakhstan)	Dr.Sc. A.A. Shcheglova (Russia, Irkutsk)
Professor H. Milochevich (Serbia)	Ph.D. N.N. Maksimkin (Russia, Irkutsk)
Professor V.A. Baturin (Russia, Irkutsk)	Professor S. Budnyam (Mongolia)
Professor B. Ochirbat (Mongolia)	Professor R. Rinchenbazar (Mongolia)
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Organizing Committee

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N.S. Maltugueva	Ph.D. S.A. Ulyanov
G.S. Maltugueva	Ph. D. A.Yu. Yurin

Important dates

March 20 2015 – Registration and abstract submission
April 15 2013 – Invitations
May 15 2013 – Confirmation of acceptance
June 25 – July 1 2013 – Conference

Location

The conference is organized in a picturesque village of Khankh (Mongolia) located at the spectacular shore of Lake Khövsgöl.



Visa support, registration fee and accommodation

International passport is required to enter Mongolia. For citizens of Russian Federation, there is no need of an entry visa.

Registration fee of 3000 rubles (2000 rubles for PhD students) is paid on-site before the start of the conference. Participants are invited to stay at the hotel “The Land’s End”. The transfer «Irkutsk-Mongolia» and accommodation fees will be announced later.

Registration and abstract submission

Registration form

RUSSIAN MONGOLIAN CONFERENCE FOR YOUNG SCIENTISTS ON MATHEMATICAL MODELING, COMPUTING TECHNOLOGIES AND CONTROL	
Name and Surname.....
Affiliation
City.....	Country.....
Title.....
Phone.....	E-mail.....
Title of the talk

The abstract requirements are listed below. The organizing committee may reject abstracts which do not fit either the subject-matter of the conference or the abstract requirements.

Registration forms and abstracts should be sent to the email address SMC2015@icc.ru. Invitations and additional information will be sent to participants after the review of the abstracts. The book of abstracts will be published prior to the start of the conference.

Contacts

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Instructions for Authors

1. Manuscripts should be submitted as a Word document and are limited to the one A4 page with the left-hand, right-hand, top and bottom margins of 25 mm. Font 12 Times New Roman with single line spacing and full justification.
2. The manuscript should contain the following information: title (in capital letters); author(s); author affiliation, country, email address. The reference list (Font 11 Times New Roman) at the end of the abstract should not be titled and is separated by one line from the core text.

EXAMPLE

GLOBAL SEATCH IN QUADRATIC TWO-LEVEL PROBLEMS WITH ELEMENTS OF GENETIC ALGOROTHM

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In this talk, we investigate the quadratic problem for the two-level programming[1] having the following form:

$$(P) \begin{cases} F(x, y) \stackrel{\Delta}{=} \frac{1}{2} \langle x, Cx \rangle + \langle c, x \rangle + \frac{1}{2} \langle y, Dy \rangle + \langle d, y \rangle \downarrow \min_{x, y}, & (x, y) \in X \stackrel{\Delta}{=} \{(x, y) \mid Ax + By \leq b\}, \\ y \in Y_*(x) \stackrel{\Delta}{=} \text{Arg min}_y \left\{ \frac{1}{2} \langle y, D_1 y \rangle + \langle d_1, y \rangle + \langle x, Q_1 y \rangle \mid A_1 x + B_1 y \leq b_1 \right\}, \end{cases}$$

where $c, x \in R^m$, $d, d_1, y \in R^n$, $b \in R^p$, $b_1 \in R^q$, $A, B, C, D, A_1, B_1, D_1, Q_1$ are matrices.

We suggest a new method for searching optimal solution in problem (P) based on the reduction of the original problem to a series of nonconvex problems of mathematical programming with an objective (d.c.) function which can be represented in the form of the difference between two convex functions [1, 2]. To solve the problems obtained, we have developed the special methods of local and global search based on the theory of global search suggested in [3].

1. Gantmakher F.R. Matrix Theory. Moscow: NAUKA publishing house, 1966.
2. Hall G., Watt J.M. Modern numerical methods for ordinary differential equations. Clarendon Press, 1976.
3. Aleksandrov A.Yu. On stability of complex systems in critical cases // Automation and Remote Control. 2001. No. 9. P. 3–13.
4. Strekalovsky A.S. Extremal Problems with D.C.-Constraints // Vychisl. Mat. Mat. 2001. Vol. 41, no. 12. P. 1833–1843.
5. Semenov A.A. Notes on computational complexity of the known supposedly one-sided function // Proc. of the XII Baikal Intern. Conf. "Optimization methods and their applications. Irkutsk, 2001. P. 142–146.