

**Computer modeling 2014
(COMOD-2014)
Program
2, July 2014**

	When	What	Were
1.	09.00-10.00	Registration	Main building, room.118
2.	10.00-11.30	Conference opening. Plenary Lectures	Main building, room.118
3.	11.30-12.30	Session 5 Computer tools in Education	Main building, room.118
4.	12.30-13.00	Coffee break	
5.	13.00-15.00	Session 2 Development and application of visual simulation environment of complex dynamic systems	Main building, room.118
6.	15.00-16.00	Lunch	
7.	16.00-17.30	Session 10 Author's lectures about software products with subsequent issuance of certificates	9 th Educational building , room 104,205

3, July 2014

	When	What	Were
1.	9.30-11.30	Session 1 Mathematical and numerical modeling	Main building, room118
	11.30- 12.00	Coffee break	
	12.00-13.30	Session 1 Mathematical and numerical modeling	Main building, room118
2.	13.30-14.30	Lunch	
3.	14.30-16.00	Session 1 Mathematical and numerical modeling	Main building, room 118
4.	16.00-18.00	Session 3 Modeling in electrical engineering and electric power industry	Main building, room, 118
5.	16.00-17.30	Session 10 Author's lectures about software products with subsequent issuance of certificates	9 th Educational building , room 104,205
6.	18.00 Bus to motor ship		At the entrance to Main building
7.	19.00-22.00	Conference diner	Excursion «Rivers and canals of St. Petersburg» and conference Dinner on motor ship

4, July 2014

	When	What	Were
1.	10.00-12.00	Session 6 Projects of young scientists	Main building, room.118
2.	12.00-13.30	Session 7 Author's presentation of new books	Main building, room 118
3.	13.30-14.30	Lunch	
4..	14.30-16.00	Session 9 Presentation of planned and completed dissertations	Main building, room 118
5.	16.00-17.30	Session 10 Author's lectures about software products with subsequent issuance of certificates	9 th Educational building , room 104,205

6.	16.00-17.00	Conference closing	Main building, room.118
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10.00-11.30 02.07.2014, Main building, room.118

Plenary Lectures

Moderators: **Senichenkov Yu.B.**

1		<p>Dmitry Y. Raychuk Vice-Rector for Research Speech of welcome</p>
2		<p>Esko Juuso University of Oulu, Faculty of Technology, Control Engineering Group University of Oulu, Finland esko.juuso@oulu.fi (<i>Esko Juuso</i>) EUROSIM - the Federation of European Simulation Societies</p>
3		<p>Borut Zupančič University of Ljubljana, Faculty of Electrical Engineering, Ljubljana, Slovenia Realization preserving modelling in Modelica</p>
4		<p>Senichenkov Yu.B. St. Petersburg Polytechnical University Rand Model Designer 7</p>
5		<p>Yury Shornikov, Eugeny Novikov (Russia) Modelling tool for Stiff Heterogeneous Systems</p>

11.30-12.30 02.07.2014, Main building, room.118

Section 5. Computer tools in Education

Moderators: **Senichenkov Yu.B.**

1. *Vladimir Platonov, Dmitrii Fomin and Vladimir Medko.* Virtual laboratory training module: programming of machining on CNC lathes under 3D model using HSM technology elements
2. *Nataliya Efimuchkina and Sergey Orlov.* Simulation models for studying the multiprocessor systems
3. *Sanat Baiguanys, Aidar Alimbaev and Arman Mirmanov.* Hardware and software system for modeling PWM and PPM signal for telemetry system

13.00-15.00 02.07.2014, Main building, room.118

Section 2. Development and application of visual simulation environment of complex dynamic systems

Moderators: **Shornikov Yu.V.,**

1. *Alipbay Dairbayev, Baurjan Belgibayev and Sabina Dairbayeva.* Determination of surface roughness using three-dimensional graphics
2. *Alexander Gornov.* Software OPTCON-A for solving nonconvex problems of parametric identification of dynamical systems
3. *Anton Anikin, Alexander Gornov and Alexander Andrianov.* Software complex "OPTCON-M" for atomic-molecular clusters potential optimization
4. *Victor Mityukov.* Universal Software for Conversion Discrete Sequences to Continuous Relationships
5. *Gleb Chudinov, Alexey Kashnikov and Marat Mal'tsev.* The architecture and features of the workbench for domain of ore transportation in the mines – bundled software "Rudopotok"
6. *Igor Parshikov, Filipp Baum, Vyacheslav Petukhov, Alexander Shchekaturov and Konstantin Timofeev.* Simintech for automated process control system development
7. *Tatiana Zarodnyuk.* Software for the computational solving of nonconvex relay optimal control problems
8. *Shornikov Yury, Bessonov Alexey, Myssak Maria and Dostovalov Dmitry.* Using ISMA Simulation Environment for Numerical Solution of Hybrid Systems with PDE

16.00-17.30 02.07.2014, 9th Educational building , room 104,205

Section 10. Author's lectures about software products with subsequent issuance of certificates

Lectures and training

1. *Isakov A.A.* Introduction in OpenMVLShell
2. *Dostovalov Dm.N. D.H.* Introduction in ISMA-Power Energetic

9.30-13.30 03.07.2014, Main building, room.118

Section 1. Mathematical and numerical modeling

Moderators: A. Grebennikov- E.A. Novikov, N.A. Tseligorov

1. **Alexander Bain, Pavel Chumachenko and Evgeniy Portnov.** Mathematical Model of Versatile Power Supply Control System of High Veracity
2. **Adolf Nogay, Otkir Kablbekova and Arthur Nogay.** Model of Dielectric Polarization in Antiferroelectric and Solid Electrolyte $\text{Na}_3\text{Cr}_2(\text{PO}_4)_3$
3. **Anatoliy Ozerskiy and Michael Shoshoashvili.** Simulation of electro-hydraulic drive with ampulized hydraulic system
4. **Vyacheslav Dianov.** Diagnosis of combined failures in digital equipment
5. **Vladimir M. Troyanovskiy.** Modeling of dynamics and stochastic processes - the major component of the manual on software engineering for the control systems
6. **Eugeny Novikov and Anton Novikov.** An Algorithm of Variable Order and Step, Based on Stages of the Dormand-Prince Method
7. **Kyaw Zaw Ye and Bain Aleksander Mikalovic.** Modeling of cognitive training system basics on technical diagnostics of distributed computing
8. **Nikolay Tseligorov, Elena Tseligorova and Gabriel Mafura.** Using Information Technology for computer modelling of nonlinear monotonous impulse control system with uncertainties
9. **Olga Afanasyeva and Oleg Bezyukov.** Modeling of combustion engines vibroactivity using the methods of similarity theory and analysis of dimensions
10. **Andrey Kostoglotov, Aleksandr Kostoglotov, Sergey Lazarenko, Boris Tsennih and Igor Deryabkin.** The combinative algorithm of identification and state estimation based on combined maximum principle for solving inverse problem in structural-parametric uncertainty
11. **Andrey Kostoglotov, Sergey Lazarenko, Boris Tsennih, Igor Deryabkin and Anton Kuznetsov.** Servoanalysers synthesis with adaptive discrete extrapolator based on combined maximum principle

14.30-16.00 03.07.2014, Main building, room.118

Section 1. Mathematical and numerical modeling

Moderators: A. Grebennikov- E.A. Novikov, N.A. Tseligorov

1. **Alexandre Grebennikov.** General Ray Method for Identification of Source Distribution in Plane Region
2. **Dardan Klimenta, Bojan Perović, Jelena Klimenta and Milena Jevtić.** Analytical and Numerical Modeling of the Effect of Tilt Angle on Natural Convection around an ETC
3. **Dardan Klimenta, Miroljub Jevtić, Dragan Tasić and Jelena Klimenta.** Modeling the Effect of Tilt Angle on Natural Convection from a Ground-Mounted PV Panel
4. **Ivan Zaporozhtsev and Vladimir Sereda.** Analysis and Forecast of Sea Level Anomalies Spatio-Temporal Variability in the Barents Sea
5. **Lev Levin, Mikhail Semin and Yuri Klyukin.** Adaptation of CFD simulation techniques for mine ventilation problems
6. **Ludmila Borisova, Natalya Serbulova and Valery Dimitrov** Simulation of Fuzzy Statements in the Problem of the Machine Technological Adjustment
7. **Anastasia Lavrova, Michael Zaks and Lutz Schimansky-Geier** Modeling of switching between rhythms in mini neuronal network

16.00-18.00 03.07.2014, Main building, room.118

Section 3. Modeling in electrical engineering and electric power industry

Moderators : **N.V. Korovkin**

1. *Elena Platonova and Gennadi Chistyakov*. Forecasting of daily electric power consumption of power grid with using technocenosis model
2. *Miroljub Jevtić, Milan Tomović, Dardan Klimenta and Djordje Novković*. Energy-economic analysis of hybrid system for remote pond supply
3. *Savoskin Anatolyi and Alexander Akishin*. The generation of multidimensional stochastic process of perturbation in the problems of railways rolling stock dynamics
4. *Michael Pustovetov*. Uniformed Mathematical Model of 3-Phase Transformer with Single Magnetic Core and It's Computer Implementation
5. *Mikhail Gryaznov and Alexander Khripkov*. System-level EMI verification and analysis using simulation methods
6. *Mikhail Balabanov* Analysis of the use of FACTS devices of different types and the ability to bring parameters of power quality to GOST R 54149-2010

16.00-17.30 03.07.2014, 9th Educational building , room 104,205

Section 10. Author's lectures about software products with subsequent issuance of certificates

Lectures and training

3. *Isakov A.A.* Introduction in OpenMVLSHELL
4. *Dostovalov Dm.N.* Introduction in ISMA-Power Energetic

10.00-12.00 04.07.2014, Main building, room.118

Section 6. Projects of young scientists

(Moderator: **Yu.B. Senichenkov**)

1. *A. Igumnoiv*. Fault-Tolerance in Redundant Distributed Hardware-Software Multi-Agent Systems
2. *Aleksandra Maiorchik*. Development of road sign and road marking recognition algorithm for active vehicular safety systems
3. *Andrey Volkov, Vadim Efimov, Serg Mescheryakov and Dmitry Shchemelinin*. Integrated Data Model for Managing a Multi-Service Dynamic Infrastructure
4. *Nikita Pelevin*. Computer modeling and analysis of the dynamic properties of hydrostatic bearing systems
5. *Yury Ilyushin, Ivan Kucherenko, Aleksander Lyashenko, Artyom Plotnikov, Pavel Ponomarchuk, Sergey Efimenko and Dmitriy Pervuchin*. Simulation Of Thermal Processes On Supercomputers

12.00-13.30 04.07.2014, Main building, room.118

Section 7. Author's presentation of new books (In Russian)

Ведущий : **профессор Сениченков Ю.Б.**

1. **Трояновский В.М.** «Информационно-управляющие системы и прикладная теория случайных процессов»
2. **Колесов Ю.Б., Сениченков Ю.Б.** «Компонентные технологии математического моделирования».
3. **Новиков Е.А., Шорников Ю.В** Компьютерное моделирование жестких гибридных систем: монография

14.30-16.00 04.07.2014, Main building, room.118

Section 9. Presentation of planned and completed dissertations (In Russian)

Ведущий : **Сениченков Ю.Б.**

1. **Пустоветов М.Ю.** Методология математического моделирования для повышения точности расчётов характеристик устройств, систем и процессов электрифицированного железнодорожного транспорта
2. **Исаков А.А.** Организация вычислений блочно-треугольных систем в пакете OpenMVLShell
3. **Достовалов Д.Н.** Спецификация и интерпретация моделей переходных процессов в системах электроэнергетики.
4. **Нетреба К.И.** Исследование методов моделирования заземляющих устройств при импульсных воздействиях

16.00-17.30 04.07.2014, 9th Educational building , room 104,205

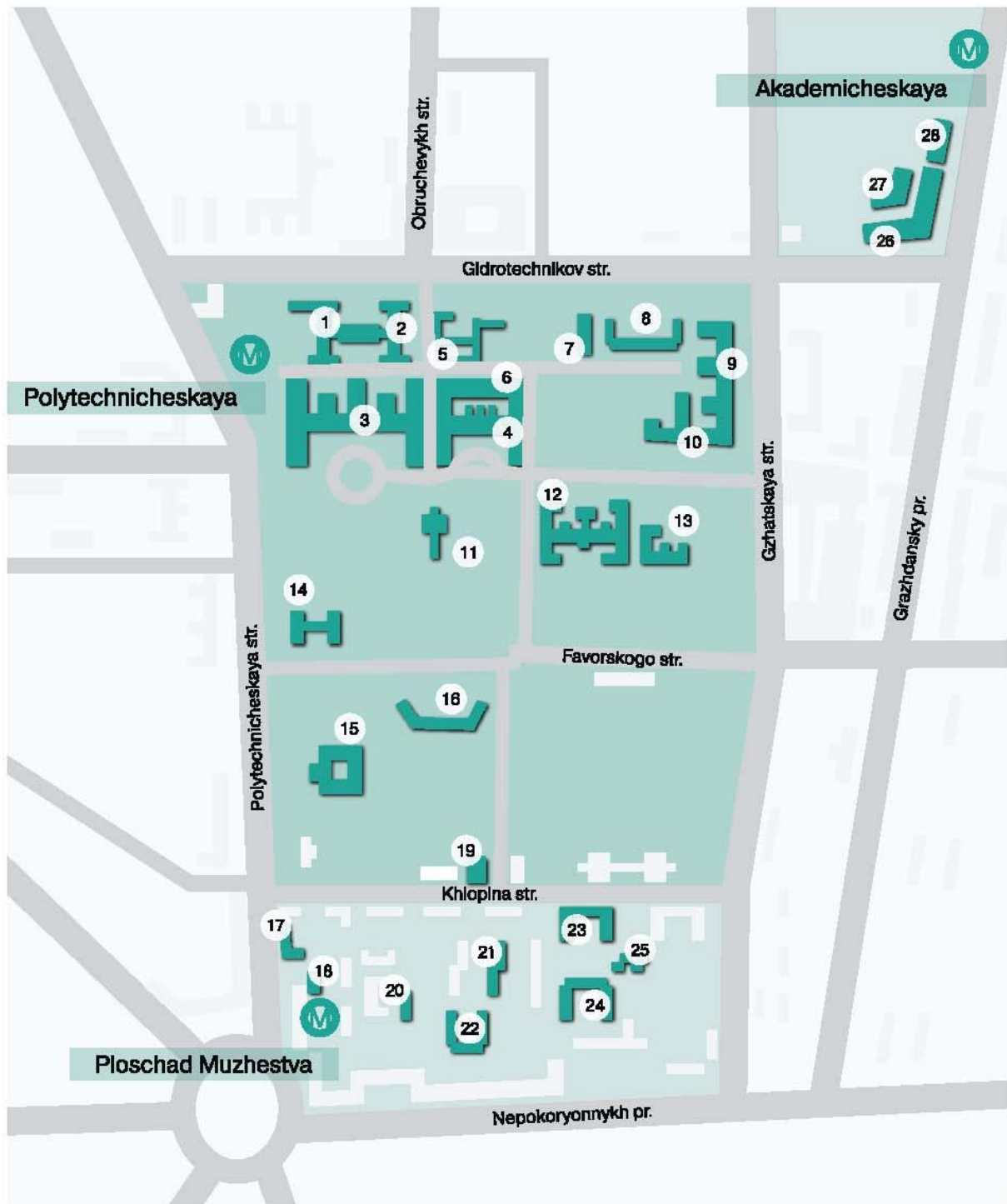
Section 10. Author's lectures about software products with subsequent issuance of certificates

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5. **Isakov A.A.** Introduction in OpenMVLShell
6. **Dostovalov Dm.N.** Introduction in ISMA-Power Energetic

16.00-17.00 04.07.2014

Conference closing



UNIVERSITY CAMPUS

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| <p>1. 1st University Building
Institute of Applied Mathematics and Mechanics
Institute of Metallurgy, Mechanical Engineering and Transport</p> <p>2. 2nd University Building
Institute of Physics, Nanotechnology and Telecommunications</p> <p>3. Main University Building
Institute of Humanities
Institute of Power Engineering and Transport Systems</p> <p>4. Chemistry Building
Institute of Metallurgy, Mechanical Engineering and Transport</p> <p>5. Mechanics Building</p> <p>6. 4th University Building</p> <p>7. Laboratories Building</p> | <p>8. 3rd University Building
Institute of Industrial Economics</p> <p>9. Annex to Hydro Building
Institute of Civil Engineering</p> <p>10. Hydro Building
Institute of Military Education and Safety</p> <p>11. Hydro Tower Building</p> <p>12. 2nd Residence</p> <p>13. House of Scientists</p> <p>14. 1st Residence</p> <p>15. Sporting Complex</p> <p>16. Center of Science PhTI-SPbSPU</p> <p>17. 9th University Building
Institute of Information Technology and Control Systems</p> | <p>18. Institute of Applied Linguistics</p> <p>19. Laser Technologies Center</p> <p>20. Student's Hostel №7</p> <p>21. Student's Hostel №8</p> <p>22. Student's Hostel №10</p> <p>23. University Clinic</p> <p>24. Student's Hostel №14</p> <p>25. Student's Hostel №12</p> <p>26. Institute of International Educational Programs
International Office of SPbSPU
Admission Office</p> <p>27. New Study Building
International Education & Science Supply Center</p> <p>28. International Student's Hostel</p> |
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