PROGRAM COMMITTEE

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SCHEDULE FOR CONFERENCE EVENTS

27 MAY, MONDAY

Registration of the Conference participants	**8.00 – 9.50**
Opening ceremony	**10.00 – 10.15**
Sessions	**10.15 – 13.00**
Lunch	**13.00 – 14.00**
Sessions	**14.00 – 17.00**
Sight-seeing guided tour of St. Petersburg	**17.30 – 21.00**

28 MAY, TUESDAY

Sessions	**9.30 – 13.00**
Lunch	**13.00 – 14.00**
Sessions	**14.00 – 18.10**
Banquet (*La Vue* restaurant)	**18.30**

29 MAY, WEDNESDAY

Sessions	**9.30 – 12.30**
Closing ceremony	**12.30 – 12.40**
Lunch	**12.40 – 13.40**

PROGRAM

MONDAY, 27 MAY

8.00 – 9.50 **REGISTRATION OF THE CONFERENCE PARTICIPANTS**

10.00 – 10.15 **OPENING CEREMONY**

SESSION I – INTEGRATED SYSTEMS

Chairmen **Dr. B.S. Rivkin**, ***Russia***
Mr. C. Dedieu, *France*

PLENARY PAPERS

10.15 – 10.35 1. **N.B. Vavilova, V.S. Vyazmin, A.A. Golovan** (*Lomonosov Moscow State University, Moscow, **Russia***)
Development of a Low-Cost INS/GNSS/Odometer Integration Algorithm for a Road Surface Testing Laboratory Software

10.35 – 10.55 2. **Xiangming Xing** (*Beijing Institute of Aerospace Control Devices, Beijing, **China***), **Runsong Zhou** (*China Aerospace Science and Technology Corporation, Beijing, **China***), **Lin Yang** (*Beijing University of Posts and Telecommunications School of Humanities, Beijing, **China***)
The Current Status of Development of Pedestrian Autonomous Navigation Technology

10.55 – 11.25 COFFEE BREAK

PLENARY PAPERS

11.25 – 11.45 3. **A.V. Chernodarov, A.P. Patrikeev** (*OOO "NaukaSoft" Experimental Laboratory, Ltd.,, **Russia***), **S.A. Ivanov** (*"Ramensky Instrument Engineering Plant", JSC, Ramenskoe, Moscow Region, **Russia***)
An Integrated Inertial-Odometric Navigation System with Satellite Calibration

11.45 – 12.05

4. **Xiao-mao Hu** (*School of Mechanical Engineering, Tianjin University, Tianjin Navigation Instrument Research Institute, Tianjin,* ***China***), **Zhan-qing Wang** (*School of Automation, Beijing Institute of Technology, Beijing,* ***China***)
A New Method Based on Dual-State Chi-Square Fault-Tolerant to Inertial/Acoustic Range Integrated Navigation System with Single Transponder

POSTER PAPERS[1]

12.05 – 12.45

5. **Feng Wu, Tianyi Shao, Chengzhi Wu, Wei Xing, Cong Gu** (*Shanghai Aerospace Control Technology Institute, Shanghai,* ***China****)*
Rapid in-Flight Alignment Algorithm for MEMS-SINS Aided by GPS

6. **Ying Zhao, Leilei Li** (*Chongqing University,* ***China***), **Xinyu Wang** (*The 26th Institute of China Electronics Technology Group Corporation, Chongqing,* ***China***), **Yu Liu** (*Chongqing University of Posts and Telecommunications,* ***China***), **Sheng Yang, Changcheng Xie** (*Chongqing University, Chongqing,* ***China***), **Jijun Bu, Jiang Li** (*The 26th Institute of China Electronics Technology Group Corporation, Chongqing,* ***China***), **Xinchuang Lin** (*Chongqing University,* ***China***)
A New INS-Aided Cycle Slip Detection and Repair Method for PPP

7. **O.S. Amosov, S.G. Amosova** (*V.A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences, Moscow,* ***Russia***)
The Neural Network Method for Detection and Recognition of Moving Objects in Trajectory Tracking Tasks According to the Video Stream

[1] *The authors of poster papers* ***at the plenary session*** *are given 3 min* ***to present the main idea of the paper*** *with 1-2 slides, if any; further discussion will continue at the posters*

8. **Shuai Zhu, S. H. Li, Yang Liu, Q. W. Fu** (*Northwestern Polytechnical University, Xi'an, **China***)
Low-Cost MEMS-IMU/RTK Tightly Coupled Vehicle Navigation System with Robust Lane-Level Positioning Accuracy

9. **O.I. Tkachenko, S.A. Kovtun, Y.B. Dubov** (*The Central Aerohydrodynamic Institute named after N.E. Zhukovsky (TsAGI), Zhukovsky, **Russia***)
The Application of Ship Motion Prediction for Ensuring the Safety of Takeoff and Landing of Carrier-Based Aircrafts

10. **Xu Bo, Asghar Abbas Razzaqi** (*College of Automation, Harbin Engineering University, Harbin, **China***)
On Placement of Surface Sensors for Cooperative Localization of Submerged Autonomous Underwater Vehicles

11. **Dan-dan Qu, Yu-ming Lu, Yu-min Tao, Mei-jiao Wang** (*Beijing Aerospace Times Laser Inertial Technology Company, Ltd, Beijing, **China***)
Study of Laser Gyro Temperature Compensation Technique on LINS

12. **Ye.I. Somov, S.A. Butyrin, T.Ye. Somova, S.Ye. Somov** (*Samara State Technical University, **Russia***)
In-flight Checking of the Accuracy of the Navigation and Motion Control System for a Surveying Satellite using Video Information

13. **I.V. Belokonov, A.V. Kramlikh, M.E. Melnik** (*Samara University, **Russia***)
An Alternative Approach to Improving Independence and Fault Tolerance of Solving the Problem of Determining Nanosatellite Attitude

14. **R.R. Bikmaev, M.D. Zolotov, A.N. Popov** (*Interregional Social Foundation "Institute of Engineering Physics", Serpukhov,* ***Russia***), **R.N. Sadekov** (*Military Innovative Technopolis "ERA", Anapa,* ***Russia***)
Improving the Accuracy of Supporting Mobile Objects with the Use of the Algorithm of Complex Processing of Signals with a Monocular Camera and LiDAR

12.45 – 13.00 **DISCUSSION OF THE POSTER PAPERS**

13.00 – 14.00 LUNCH

Chairmen: **Prof. O.A. Stepanov,** ***Russia***
Prof. Yuanxin Wu, ***China***

INVITED PAPER

14.00 – 14.45

15. **Peter Hecker, Ulf Bestmann, Stephan Wolkow, Maik Angermann, Andreas Dekiert** (*Institute of Flight Guidance Technische Universität Braunschweig, Braunschweig,* ***Germany***)
Integrity Enhancement of an Integrated Navigation System with Optical Sensors

PLENARY PAPER

14.45 – 15.05

16. **N.N. Vasilyuk, M.Yu. Vorobiev, D.K. Tokarev** (*Topcon Positioning Systems, LLC, Moscow,* ***Russia***)
Integrated Navigation System with a Dual-Antenna GNSS Receiver and a MEMS IMU Embedded into One of the Two Antennas

POSTER PAPERS[1]

15.05 – 15.25

17. **M.S. Selezneva, A.V. Proletarsky, K.A. Neusypin**, **Lifey Zhang** (*Bauman Moscow State Technical University,* ***Russia***)
Modification of the Federated Kalman Filter Using the Observability Degree Criterion of State Variables

[1] *The authors of poster papers* ***at the plenary session*** *are given 3 min* ***to present the main idea of the paper*** *with 1-2 slides, if any; further discussion will continue at the posters.*

18. **M.S. Selezneva, K.A. Neusypin, I.V. Muratov** (*Bauman Moscow State Technical University, Moscow, **Russia***)
Research on Criteria for the Degree of Controllability of the State Variables of Dynamic Systems Models

19. **P. Davidson** (*Tampere University, Faculty of Information Technology and Communication Sciences, **Finland***), **M. Mansour** (*Tampere University, Finland, ITMO University, St. Petersburg, **Russia***), **O.A. Stepanov** (*ITMO University, St. Petersburg, Concern CSRI Elektropribor, JSC, St. Petersburg, **Russia***), **R. Piché** (*Tampere University, **Finland***)
Depth Estimation from Motion Parallax: Experimental Evaluation

20. **R.V. Ermakov, A.A. Seranova, D.Yu. Livshits, I.K. Kuz'menko, D.E. Gutsevich, K.D. Chekhovskaya, E.N. Skripal', A.V. Abakumov** (*SC "Design Bureau of Industrial Automatics", Saratov, **Russia***), **A.A. L'vov** (*Yuri Gagarin State Technical University of Saratov, Saratov, **Russia***)
Aspects of Designing a Fail-Safe Flight and Navigation System for Unmanned Aerial Vehicles

21. **M.S. Selezneva, A.V. Babichenko, A.V. Proletarsky, K.A. Neusypin, I.V. Muratov** (*Bauman Moscow State Technical University, Moscow, **Russia***)
A Promising Flight-Navigation Complex with an Intelligent Component

22. **Ye.I. Somov, S.A. Butyrin, S.Ye. Somov, T.Ye. Somova** (*Samara State Technical University, **Russia***)
Navigation and Control of Free-Flying Robot-Manipulator at Mechanical Capturing of a Passive Space Vehicle

23. **Ruichen Zhang, Shaofeng Bian, Bing Ji** (*Naval University of Engineering, Wuhan, **China***)
Bathymetric Data Fitting Based on Fourier Series of Linear Complementarity

15.25 – 15.30 **DISCUSSION OF THE POSTER PAPERS**

15.30 – 16.00 COFFEE BREAK

Chairmen: **Prof. A.A. Golovan, *Russia***
Mr. N.G. Skidanov, *Russia*

PLENARY PAPER

16.00 – 16.20

24. **Hao Xiong, Xingshu Wang, Jiaxing Zheng, Yingwei Zhao, Jinpeng Zhou** (*College of Advanced Interdisciplinary Studies, National University of Defense Technology, Changsha, **China***)
Performance Evaluation of Tightly-Coupled INS/PPP Integrated Navigation in Remote Marine Surveying Application

POSTER PAPERS[1]

16.20 – 16.50

25. **V.A Tupysev** (*Concern CSRI Elektropribor, JSC, State University of Aerospace Instrumentation (SUAI), St. Petersburg, **Russia***), **Yu. A Litvinenko** (*Concern CSRI Elektropribor, JSC, ITMO University, St. Petersburg, **Russia***)
Application of Polynomial-Type Filters to Integrated Navigation Systems with Modular Architecture

26. **D.A. Bedin** (*Ural Federal University named after the First President of Russia B.N. Yeltsin, N.N. Krasovskii Institute of Mathematics and Mechanics of Ural Branch of Russian Academy of Sciences, Yekaterinburg, **Russia***)
Linear Bayesian Estimate for Multilateration Problem in Presence of Outliers

27. **D.A. Bedin, A.G. Ivanov** (*N.N. Krasovskii Institute of Mathematics and Mechanics (IMM UB RAS), Yekaterinburg, **Russia***)
The Use of a Genetic Algorithm for Parameter Adjustment of the Multi-Hypothesis Aircraft Tracking Algorithm

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28. **H. Buchner, B.I. Ahmad, S. Godsill** (*Cambridge University, **United Kingdom***)
Scene Analysis with Moving Sensor Arrays and Objects in Time-Varying Scenarios for Autonomous Systems and Robotics

29. **E.B. Gorskiy, E.G. Kharin, I.A. Kopylov, V.A. Kopelovich, A.V. Yasenok** (*JSC "M.M. Gromov Flight Research Institute", Zhukovsky, **Russia***)
Trajectory Measurements During Monitoring and Testing of Ground-Based Radio Equipment and Airborne Equipment of Instrument Landing Systems

30. **D.V. Khadanovich, V.I. Shiryaev** (*South Ural State University (National Research University), Chelyabinsk, **Russia***)
To the Problem of Adaptive Guaranteed Estimation on a Short Observation Interval

31. **A.V. Nebylov, V.A. Nebylov, A.I. Panferov, S.A. Brodsky** (*State University of Aerospace Instrumentation, St. Petersburg, **Russia***)
Methods of Motion Control Algorithms Synthesis in the Area of Ground-Effect

16.50 – 17.00 **DISCUSSION OF THE POSTER PAPERS**

17.30 – 21.00 SIGHT-SEEING GUIDED TOUR OF SAINT PETERSBURG

TUESDAY, 28 MAY

SESSION I – INTEGRATED SYSTEMS (continued)

Chairmen: **Dr. Yu.A. Litmanovich, *Russia***
Prof. G. Trommer, *Germany*

PLENARY PAPERS

9.30 – 9.50 32. **I.V. Belokonov, I.A. Timbai, D.D. Davydov** (*Samara National Research University named after academician S. P. Korolyov, Samara,* ***Russia***)
Passive Stabilization Systems for CubeSat Nanosatellites: General Principles and Features

9.50 – 10.10 33. **I.N. Kornilov** (*Ural Federal University named after the First President of Russia B.N. Yeltsin, Yekaterinburg,* ***Russia***)
Improvement of Positioning Accuracy of Aerologic Sonde by Means of GPS/GLONASS

10.10 – 10.30 34. **Hamza Benzerrouk, Quang Nguyen, Xiaoxing Fang, Abdessamad Amrhar, R. Jr Landry** *(Laboratory of Space Technologies, Embedded Systems, Navigation and Avionic (LASSENA), Montreal,* ***Canada)*****, A.V. Nebylov** (*State University of Aerospace Instrumentation, St. Petersburg,* ***Russia***)
Alternative PNT Based on Iridium Next LEO Satellites Doppler/INS Integrated Navigation System

10.30 – 10.50 35. **K. Mueller** (*Karlsruhe Institute of Technology (KIT), Institute of Systems Optimization (ITE), Karlsruhe,* ***Germany****),* **G. F. Trommer** (*Karlsruhe Institute of Technology (KIT), Institute of Systems Optimization (ITE),* ***Germany****, ITMO University, St. Petersburg,* ***Russia***)
Real-Time Image Matching and Tracking for Autonomous Quadrotor Helicopters

POSTER PAPERS[1]

10.50 – 11.20

36. **S.V. Shafran, I.A. Kudryavtsev, V.M. Grechishnikov** (*Samara National Research University,* ***Russia***), **A.V. Arkhipov** (*JSC "ELARA", Cheboksary,* ***Russia***)
Application of IC NT1065 "Nomada"

37. **Houpu Li, Jie Xu, Kunpeng Zuo, Yuansheng Hua** (*Naval University of Engineering, Wuhan,* ***China***)
The Positioning Performance Analysis of BeiDou Navigation Satellite System on the Maritime Silk Road

38. **A.V. Telny** (*Vladimir State University,* ***Russia***)
About the Possibility of Integrating Information from Satellite Navigation Systems

39. **A.V. Kramlikh, I.A. Lomak, S.V. Shafran** (*Samara University,* ***Russia***)
Estimating the Inertial Characteristics of a Nanosatellite Using a Radio Compass Based on GNSS Technology

40. **E.V. Barinova, I.A. Timbai** (*Samara National Research University,* ***Russia***)
Study of Relative Equilibrium Positions of a Dynamically Symmetric CubeSat Nanosatellite under Aerodynamic and Gravitational Moments

41. **S.B. Berkovich, N.I. Kotov, A.Yu. Makhaev, A.V. Sholokhov, S.E. Chernyshev** (*Interregional Social Foundation "Institute of Engineering Physics", Serpukhov,* ***Russia***), **N.V. Kuz'mina, S.M. Tarasov** (*Concern CSRI Elektropribor, JSC, St. Petersburg,* ***Russia***)
Method of Relative Measurements to Control the Accuracy Characteristics of an Automatic Astronomic Azimuth System

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42. **Tijing Cai, Qimeng Xu, Daijin Zhou, Shuaipeng Gao, Yang Liu, Junxiang Huang** (*School of Instrument Science and Engineering, Southeast University, Nanjing,* ***China****),* **G.I. Emelyantsev, A.P. Stepanov** (*Concern CSRI Elektropribor, JSC, ITMO University, St. Petersburg,* ***Russia***)
A Multimode GNSS/MIMU Integrated Orientation and Navigation System

43. **D.S. Iarosh, A.V. Kornilova, G.V. Reneva, P.A. Konovalov** *(Saint Petersburg State University, St. Petersburg,* ***Russia***)
Multiagent System of Mobile Robots for Robotic Football

The paper is recommended by the Program Committee of the 21st Conference of Young Scientists Navigation and Motion Control

44. **M.O. Gorodov, S.A. Filippov** (*Presidential Lyceum of Physics and Mathematics #239, St. Petersburg,* ***Russia***)
Autonomous Team of Robots-Footballers

The paper is recommended by the Program Committee of the 21st Conference of Young Scientists Navigation and Motion Control

11.20 – 11.30 **DISCUSSION OF THE POSTER PAPERS**

11.30 – 12.00 COFFEE BREAK

SESSION II - INERTIAL SYSTEMS AND SENSORS

Chairmen: **Prof. Yu.V. Filatov,** ***Russia***
Mr. A.V. Motorin, Ph.D., ***Russia***

PLENARY PAPER

12.00 – 12.20 45. **I.A. Chistiakov, A.A. Nikulin, I.B. Gartseev** (*Huawei Technologies Co. Ltd., Moscow,* ***Russia***)
Pedestrian Dead-Reckoning Algorithms for Dual Foot-Mounted Inertial Sensors

POSTER PAPERS[1]

12.20 – 12.55

46. **D.G. Griazin** (*Concern CSRI Elektropribor, JSC, ITMO University, St. Petersburg**, Russia)*, **I.V. Sergachyov, Yu.V. Matveev** (*Concern CSRI Elektropribor, JSC, St. Petersburg, **Russia***)
A Method for Measuring the Magnetic Heading of a Vessel in High Latitudes and its Implementation in the Azimuth-KM05D Compass

47. **A.V. Soubbotin, V.S. Yermakov, M.B. Mafter** (*Perm Scientific-Industrial Instrument Making Company, **Russia)***
Engineering and Operational Aspects of Miniature Marine Integrated Navigation and Stabilization System on Fiber-Optic Gyroscopes KAMA-NS-V

48. **A.V. Kozlov, F.S. Kapralov** (*Lomonosov Moscow State University, Moscow, **Russia***), **A.V. Fomichev** (*Moscow Institute of Electromechanics and Automatics, **Russia***)
Calibration of a Timing Skew between Gyroscope Measurements in a Strapdown Inertial Navigation System

49. **A.A. Fedotov, S.Yu. Perepelkina** (*JSC Academician N.A. Semikhatov Scientific and Production Association of Automatics, Yekaterinburg, **Russia***)
Improvement in Accuracy of Strapdown Inertial Navigation System due to Controlled Precessional Motion

50. **D.A. Burov** *(All-Russian Scientific Research Institute "Signal" Joint Stock Company (AO "VNII "Signal"), Kovrov, **Russia***)
From Platform to Strapdown Gyro Systems: External Disturbance Filtering for SINS Initial Alignment. The Results of Its Application

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51. **V.Ya. Raspopov, V.V. Matveev, V.V. Likhosherst, A.V. Ladonkin** (*Tula State University, **Russia**),* **I.A. Volchikhin, S.I. Shepilov** (*OJSC "Michurinsky plant of "Progress", Michurinsk, Tambovskaya oblast, **Russia***)
Coriolis Vibratory Gyroscope with a Metal Resonator for Free Wave Mode

52. **V.Ya. Raspopov, A.V. Ladonkin, V.V. Likhosherst** (*Tula State University, **Russia***)
Calibration of a Coriolis Vibratory Gyroscope with a Metal Resonator and an Electronic Unit

53. **Y. X. Tian, S. J. Liu, T. Z. Xu, H. F. Zhang, X. K. Xu, Z. Y. Wei, K. Yi, J. D. Shao** (*Key Laboratory of Materials for High-Power Laser, Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, **China***)
The Development of the Vibration Equation of wave Solid-State Gyroscope

54. **S.V. Pavlova** (*Concern CSRI Elektropribor, JSC, St. Petersburg, **Russia***), **Ya.A. Nekrasov** (*ITMO University, St. Petersburg, **Russia***)
Optimization of MEMS gyro Electrode Configuration and Laws of Voltage Formation

The paper is recommended by the Program Committee of the 21st Conference of Young Scientists Navigation and Motion Control

55. **D.S. Gnusarev** (*Branch of FSUE "Academician Pilyugin Center" - Production Association "Korpus", Saratov, **Russia***)
Development of Combined Model of Quartz Pendulum Accelerometer with Closed Loop Control and Optimization of Parameters

The paper is recommended by the Program Committee of the 21st Conference of Young Scientists Navigation and Motion Control

56. **S.B. Bekbauova, Yu.V. Filatov, N.A. Nikolaeva, E.V. Shalymov, V.Venediktov** (*Sate Petersburg Electrotechnical University LETI,* ***Russia***)
Evaluation of the Impact of External Influences on the Characteristics of the Ring Confocal Resonator

The paper is recommended by the Program Committee of the 21st Conference of Young Scientists Navigation and Motion Control

12.55– 13.00 **DISCUSSION OF THE POSTER PAPERS**

13.00 – 14.00 LUNCH

PLENARY PAPERS

14.00 – 14.20 57. **L.V. Vodicheva, Yu.V. Parysheva** (*JSC Academician N.A. Semikhatov Scientific and Production Association of Automatics, Yekaterinburg,* ***Russia***)
Error Analysis Technique for Indirect Method of Calibration of a Strapdown Inertial Measurement Unit

14.20 – 14.40 58. **N.B. Vavilova, A.A. Golovan, A.V. Kozlov, I.A. Papusha, N.A. Parusnikov** (*Lomonosov Moscow State University, Moscow,* ***Russia)***, **O.A. Zorina, E.A. Izmaylov, S.E. Kuhtevich, A.V. Fomichev** (*Moscow Institute of Electromechanics and Automatics, Moscow,* ***Russia***)
Using Observability Measures in a Strapdown INS Auto-calibration

14.40 – 15.00 59. **Yuanxin Wu** (*Shanghai Jiao Tong University,* ***China)***
Next-Generation Inertial Navigation Computation Based on Functional Iteration

POSTER PAPERS[1]

15.00 – 15.20 60. **Yu.N. Chelnokov** (*Institute of Precision Mechanics and Control, Russian Academy of Sciences, Saratov,* ***Russia***)
Quaternion Regular Equations and Algorithms of Space Inertial Navigation

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61. **A.V. Molodenkov, Ya.G. Sapunkov** (*Institute of Precision Mechanics and Control of RAS, Saratov,* ***Russia***), **T.V. Molodenkova** (*Yu. A. Gagarin Saratov State Technical University, Saratov,* ***Russia***), **S.E. Perelyaev** (*Ishlinsky Institute for Problems in Mechanics of RAS, Moscow,* ***Russia***)
Analytical Solution of an Approximate Equation for the Vector of a Rigid Body Finite Rotation and its Application to Construct the Algorithm for Determining the Strapdown INS Orientation

62. **Altinöz Bağiş, Önen Anil Sami, Günhan Yeşim** (*Roketsan Inc., Ankara,* ***Turkey***)
Determination of Allan Variance Coefficients Using Genetic Algorithm

63. **V.V. Avrutov, Yu.F. Lazarev** (*National Technical University of Ukraine (Igor Sikorsky Kiev Polytechnic Institute),* ***Ukraine***)
Autonomous Determination of an Initial Position Data

64. **Wangyang Zhao** (*Tianjin Navigation Instrument Research Institute,* ***China***)
A Study on Alignment of Analytic Space Stable Inertial Navigation System

65. **V.M. Nikiforov, A.A. Gusev, K.A. Andreev, T.A. Zhukova, A.S. Shiryaev** (*Academician Pilyugin Scientific-Production Center of Automatics and Instrument-Making, Moscow,* ***Russia***)
"Supersoft" Control of Final Parameters in a Single-Axis Gyrostabilizer

15.20 – 15.30 **DISCUSSION OF THE POSTER PAPERS**

15.30 – 16.00 COFFEE BREAK

Chairmen: **Mr. K.K. Veremeenko, Ph.D., *Russia***
Mr. A.Yu. Sokolov, Ph.D., *Russia*

PLENARY PAPERS

16.00 – 16.20

66. **V.I. Grebennikov, D.M. Kalikhman, L.Ya. Kalikhman, S.F. Nakhov, A.Yu. Nikolaenko, V.V. Skorobogatov, E.A. Deputatova** (*Branch of FSUE "Academician Pilyugin Center" - Production Association "Korpus", Saratov, **Russia***), **R.M. Samitov, V.E. Kozhevnikov** (*S.P. Korolev Rocket and Space Corporation Energia, Korolev, **Russia***)
Six-axis Unit of Specific Force Meters Based on a Precision Quartz Pendulum Accelerometer with Digital Feedback for Control Systems of Soyuz MS and Progress MS Spacecrafts

16.20 – 16.40

67. **B. Osunluk** (*Dept. of Electrical and Electronics Eng., Bilkent University, Aselsan Inc., Microelectronics, Guidance and Electro-optics, Ankara, **Turkey***), **S. Ogut, E. Ozbay** (*Dept. of Electrical and Electronics Eng., Bilkent University, Nanotechnology Research Center, Bilkent University, Ankara, **Turkey***)
Optimization of Fiber Optic Gyroscope Parameters for Low Noise Applications

16.40 – 17.00

68. **Yu.Yu. Broslavets, A.A. Fomichev, D.M. Ambartsumyan** (*Moscow Institute of Physics and Technology (State University), JSC "Lasex", Dolgoprudny, **Russia***), **R.O. Egorov, E.A. Polukeev** (*Moscow Institute of Physics and Technology (State University), Dolgoprudny, **Russia***)
Coupling of Counterpropagating Waves in Two and Four-Frequency Zeeman Laser Gyroscopes with a Nonplanar Cavity

POSTER PAPERS[1]

17.00 – 17.50

69. **V.A. Soldatenkov, V.M. Achil'diev, Yu.K. Gruzevich, A.D. Levkovich, N.A. Bedro, M.N. Komarova, Yu.N. Evseeva** (*Scientific Production Unity "GEOPHIZIKA-NV" Stock Company, Moscow, **Russia***), **M.A.Basarab, N.S. Konnova** (*Bauman Moscow State Technical University, Moscow, **Russia***), **V.M. Uspenskii** (*Branch of the Kirov Military-Medical Academy, Moscow, **Russia***)
Electroseismocardiography System for Non-Invasive Human Diseases Diagnosis

70. **V.A. Soldatenkov, Yu.K. Gruzevich, V.M. Achil'diev, M.N. Komarova, N.A. Bedro, A.D. Levkovich** (*SPU GEOPHIZIKA-NV St. Com, Moscow, **Russia***), **Yu.K. Gruzevich** (*Bauman Moscow State Technical University, **Russia***), **V.M. Achil'diev (***Mytischi Branch of Bauman Moscow State Technical University, Mytischi, Moscow region, **Russia***)
Tilt and Microvibration Sensor for Condition Monitoring of Buildings

71. **V.F. Zhuravlev, S.E. Perelyaev** (*Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences Moscow, **Russia**),* **B.P. Bodunov, S.B. Bodunov** *(JSC SPE Medicon, Miass, Chelyabinsk Reg., **Russia***)
New-Generation Small-Size Solid-State Wave Gyroscope for Strapdown Inertial Navigation Systems of Unmanned Aerial Vehicle

72. **Günhan Yeşim, Önen Anil Sami, Altinöz Bağiş** (*Roketsan Inc., Ankara, **Turkey***)
Error Stabilization Test and Performance Evaluation of Micro Electro-Mechanical System Based Inertial Sensors

73. **I.Yu. Bykanov, V.M. Nikiforov** (*Federal State Unitary Academician Pilyugin Scientific-Production Center of Automatics and Instrument-Making, Moscow, **Russia***)
Estimation of Strength for the Sensitive Element of Si-Flex-Type Compensating Pendulum Accelerometer by the Method of Finite Element Analysis

[1] *The authors of poster papers **at the plenary session** are given 3 min **to present the main idea of the paper** with 1-2 slides, if any; further discussion will continue at the posters.*

74. **I.M. Okon** (***USA***)
Vibrating Coriolis Gyroscope Calibration and Bias Auto-Compensation

75. **A.A. Maslov, D.A. Maslov, I.V. Merkuryev, V.V. Podalkov** (*National Research University "Moscow Power Engineering Institute", Moscow,* ***Russia***)
Dynamics of the Ring Micromechanical Gyroscope Taking into Account the Nonlinear Stiffness of the Suspension

76. **A.S. Kovalev** (*Concern CSRI Elektropribor, JSC, St. Petersburg,* ***Russia***)
Phase Method for Measuring the Output Signal of a Single-Mass MEMS Gyroscope as a Possibility of Improving its Performance

77. **I.V. Papkova, A.V. Krysko** (*Yuri Gagarin State Technical University of Saratov, Saratov,* ***Russia****),* **M.A. Barulina** (*Institute of Precision Mechanics and Control, Russian Academy of Sciences, Saratov,* ***Russia***), **V.A. Krysko** (*Yuri Gagarin State Technical University of Saratov, Saratov,* ***Russia****)*
Mathematical Modeling of Nonlinear Dynamics of Components of Nanoelectromechanical Sensors Taking into Account Thermal, Electrical and Noise Impact

78. **D.M. Kalikhman, E.A. Deputatova, D.S. Gnusarev** (*Branch of FSUE "Academician Pilyugin Center" - Production Association "Korpus", Saratov,* ***Russia***), **V.M. Nikiforov, I.Yu. Bykanov** (*FSUE "Academician Pilyugin Center", Moscow,* ***Russia***)
Dynamic Output Regulator of the Angular Rate Sensor Built on the Invariant Ellipsoid Methods

79. **D.M. Kalikhman, E.A. Deputatova, D.S. Gnusarev, V.V. Skorobogatov** (*Branch of FSUE "Academician Pilyugin Center" - Production Association "Korpus", Saratov,* ***Russia***), **V.M. Nikoforov** (*FSUE "Academician Pilyugin Center", Moscow,* ***Russia****),* **E.P. Krivtsov, A.A. Yankovsky** (*D. I. Mendeleyev Institute for Metrology (VNIIM), St. Petersburg,* ***Russia****)*
Development of Digital Regulators for Control Systems of Gyroscopic Devices and Associated Metrological Installations Using Modern Methods of Synthesis to Improve Accuracy and Dynamic Characteristics

80. **S.E. Beketov, V.N. Gorshkov, N.I. Khokhlov** (*Polyus Research Institute named after M.F. Stelmakh, Moscow,* ***Russia***) **A.S. Bessonov** (*MIREA - Russian Technological University, Moscow,* ***Russia***), **E.A. Petrukhin** (*Polyus Research Institute named after M.F. Stelmakh; JSC "Serpukhov plant "Metallist", Moscow reg., Serpukhov,* ***Russia***)
Modeling of Scale Factor Nonlinear Distortions of Laser Gyro with Alternating Rectangular Bias

17.50 – 18.00 **DISCUSSION OF THE POSTER PAPERS**

18.30 B A N Q U E T (***La Vue*** restaurant)

WEDNESDAY, 29 MAY

SESSION III - GRAVIMETRIC SYSTEMS AND THEIR APPLICATION IN NAVIGATION

Chairmen: **Dr. A.V. Sokolov, *Russia***
Prof. V.N. Koneshov, *Russia*

PLENARY PAPERS

10.00 – 10.20 81. **Ruihang Yu, Shaokun Cai, Juliang Cao, Meiping Wu, Guowei Pan, Minghao Wang** *(National University of Defense Technology (NUDT), Changsha, **China**)*
A Marine Gravimetry Test Using Strapdown Gravimeter in the South China Sea

10.20 – 10.40 82. **V.G. Peshekhonov, A.V. Sokolov, A.A. Krasnov** (*Concern CSRI Elektropribor, JSC; ITMO University, St. Petersburg, **Russia***)
Development of Gravimetric Systems Produced by CSRI Elektropribor

POSTER PAPERS[1]

10.40 – 11.05 83. **L.V. Kiselev** (*Institute of Marine Technology Problems , Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, **Russia***), **V.B. Kostousov** (*N.N. Krasovskii Institute of Mathematics and Mechanics Ural Branch of the Russian Academy of Sciences, Yekaterinburg**, Russia***)
On Interrelation and Similarity in Solution of Navigation and Gravimetric Tasks in Underwater Robotics

84. **M. Wu, M. Wang, J. Cao, K. Zhang, X. Pan, S.Cai, R. Yu, B. Yang** (*National University of Defence Technology (NUDT) , Changsha, **China***)
Improving Strapdown Airborne Gravimetry by Yaw Tracking Rotation Modulation

[1] *The authors of poster papers **at the plenary session** are given 3 min **to present the main idea of the paper** with 1-2 slides, if any; further discussion will continue at the posters.*

85. **A.V. Motorin, D.A. Koshaev, O.A. Stepanov,** (*ITMO University, Concern CSRI Elektropribor, JSC, St. Petersburg,* ***Russia****)*
Performance Analysis of the Use of Satellite Measurements in Marine Gravimetry

86. **Jing Zhu** (*College* of *Meteorology and Oceanography, National University of Defense Technology, Changsha,* ***China***), **Dongkai Dai, Wei Wu, Xingshu Wang** (*College of Advanced Interdisciplinary Studies, National University of Defense Technology, Changsha,* ***China***), **Jun Wang (***College* of *Meteorology and Oceanography, National University of Defense Technology, Changsha,* ***China*****)**
Assessment of the Impact of the Measurement Noise on the Gravity Anomaly Matching Technique

87. **Shaofeng Bian, Houpu Li, Liwen Kang, Menghan Xi** (*Naval University of Engineering, Wuhan,* ***China***)
The Geometrical and Gravimetric Differences between CGCS 2000 in China and PZ-90.02 in Russia

88. **Zhaohai Meng, Pengfei Li** (*Tianjin Navigation Instrument Research Institute, Tianjin,* ***China***)
The Calculation of Deflections of the Vertical from the Earth Gravitational Model

11.05– 11.20 **DISCUSSION OF THE POSTER PAPERS**

11.20 – 11.50 COFFEE BREAK

PLENARY PAPERS

11.50 – 12.10 89. **Juliang Cao, Zhiming Xiong, Meiping Wu, Kaidong Zhang, Shaokun Cai, Ruihang Yu, Ze Chen** (*National University of Defence Technology(NUDT), Changsha,* ***China***)
A Two-Stage Towed Strapdown Underwater Gravity Measurement System

12.10 – 12.30 90. **D. Li, J. Liang, H. Liu, W. Gao, C. Li** (*Tianjin Navigation Instrument Research Institute,* ***China***)
Vertical Motion Compensation Method for Aerial Measurement of Rotating Accelerometer Gravity Gradiometer

12.30 – 12.40 **CLOSING CEREMONY**

12.40 – 13.40 LUNCH