



## Program of the Conference

8 – 10 october 2024

50, Svetlanskaya Street, Vladivostok

### 8 october 2024

- 9.00 - 10.00 Registration of conference participants
- 10.00 - 10.15 Opening of the International Conference on Ocean Study 2024. Dolgikh Grigorii, academician of RAS
- 10.15 - 10.45 Plenary report Konoplin Alexandr, director of Academician M. D. Ageev Institute of Marine Technology Problems Far Eastern Branch of RAS (IMTP FEB RAS)
- 10.45 - 11.15 Plenary report Rodionov Alexandr, scientific director of the hydroacoustic communications and navigations laboratory of IMTP FEB RAS
- 11.15 - 11.30 Video about the World Ocean exploration

### Break until 14-00

#### Section **Deep Ocean Research, Oceanography and Marine Environment** (Section Chairman Dr. Alexander Rodionov)

- 14-00 - 14.15 Olga Trusenkova \*, Elena Kustova *The summer reversal of the East Kamchatka Current from satellite altimetry data* (V.I. Il'ichev Pacific Oceanological Institute FEB RAS)
- 14.15 - 14.30 Zhanna Tskhay\*, Viktor Filatov *Spatial and temporal variations in thermal conditions during the saury fishery in the NorthWest Pacific based on satellite data* (Sakhalin branch of "VNIRO" )
- 14.30 - 14.45 Sergey Kasatkin\*, Nadezhda Zlobina *Application of Secondary Spectral Analysis for Hydroacoustic Signal Processing* (IMTP FEB RAS)
- 14.45 - 15.00 Filipp Belchenko\*, Ivan Ermolov, Georgij Nagajcev, Artem Sukhanov, Pavel Ostrikov *Comparison of UAVs' Trajectories for Sea Surface Survey within Fish Search* (IPMech RAS)
- 15.00 - 15.15 Dmitry Gryazin\*, Olga Belova *Metrological support of wave meters based on hydrodynamic pressure sensors* (Concern CSRI Elektropribor, JSC ITMO University)

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\* - speaker of the report

## Coffee break

### Section **Complex Mathematical Problems of Ocean Monitoring and Modeling** (Section Chairman Dr. Alexander Inzartsev )

- 16.00 - 16.15 Sergey Dyakov\*, Marina Aleksanina, Anton Karnatskiy *Calculation of Drift Velocities and Compression/Rarefaction Zones of the Sea Ice Cover on Satellite Images of the KMSS/Meteor-M Device* (IACP FEB RAS)
- 16.15 - 16.30 Sergey Dyakov\*, Marina Aleksanina, Anastasia Ershova *Calculation of Compositional Maps of Sea Surface Temperature from IR Measurements of US Satellites* (IACP FEB RAS, FEFU)
- 16.30 - 16.45 Alexey Ermoshkin\*, Nikolay Bogatov, Ivan Kapustin, Aleksandr Molkov *A Physical Based Method for Retrieval Ocean Currents and Significant Wave Height Using Doppler Marine Radar* (A.V. Gaponov-Grekhov Institute of Applied Physics of the RAS)
- 16.45 - 17.00 Iman Valizadeh\*, Jaime Lloret\_Mauri *Multi-hop Communication for Underwater Wireless Sensor Networks* (Valencia Polytechnic University)

## 9 october 2024

- 09.30 - 10.00 Registration of conference participants

### Section **Unmanned Marine Vehicles and Systems** (Section Chairman PhD Alexander Konoplin)

- 10.00 - 10.15 Valeriy Knyazhev *Fuel Cells for AUV Power Supply* (IMTP FEB RAS)
- 10.15 - 10.30 Mikhail Belousov\*, Dmitry Yukhimets, Anton Gubankov *Development of Information-Control System for Unmanned Underwater Vehicle by Means of ROS2* (IMPP FEB RAS, IACP FEB RAS, Sevastopol State University, Admiral G.I. Nevelskoy Maritime State University)
- 10.30 - 10.45 Antonina Shupikova\*, Valeriy Bobkov, Alexander Inzartsev *A Method for Underwater Pipeline Tracking from Stereo Images* (IMTP FEB RAS, IACP FEB RAS )
- 10.45 - 11.00 Valeriy Knyazhev\*, Vladimir Loshchenkov *Storage of Reagents for Fuel Cells in the AUV* (IMTP FEB RAS)
- 11.00 - 11.15 Nikita Krasavin\*, Alexander Konoplin *The Underwater Manipulator Position Correction Method for Performing Contact Operations* (IMTP FEB RAS)
- 11.15 - 11.30 Yurii Matvienko\*, Sergey Pereselkov, Viktor Kuz'kin *Experimental Results of Autonomous Underwater Vehicle 2D-Hologram by a Vector Receiver* (IMTP FEB RAS, Voronezh State University, General Physics Institute)

## Coffee break

### Section **Navigation and Motion Control** (Section Chairman PhD Fedor Dubrovin)

- 12.00 - 12.15 Fedor Dubrovin *On Determining the Spatial Orientation of a Marine Navigation Platform Based on Spatial Orientation Measurements of a Pair of Non-Collinear Measurement Bases* (IMTP FEB RAS)
- 12.15 - 12.30 Sergey Fadyushin\*, Alexander Lentarev, Elena Vereschaginan, Yana Pafnuteva, Alexander Tretyak, Sergey Pashin *Conceptual Fundamentals of the Symbiotic Partnership in the Course of Controlling ManMachine Systems of the Navigator-Ship Type* (FEFU)
- 12.30 - 12.45 Dmitry Yukhimets *The AUV Control System for Trajectory Movement Taking into Account the Limitations of its Thruster System* (IACP FEB RAS)
- 12.45 - 13.00 Igor Gornostaev\*, Anton Gubankov *Development of Method of Generating a Reference Movement Speed of a Group of UAVs* (IACP FEB RAS, IMTP FEB RAS, Admiral G.I. Nevelskoy Maritime State University)
- 13.00 - 13.15 Alexey Pavlov *An approach to debugging control algorithms for an autonomous underwater vehicle during highprecision navigation to port using data from deepsea television cameras* (Concern CSRI Elektropribor)

## Break until 14-00

Section **Underwater Robotics and Systems**  
(Section Chairman PhD Eduard Mursalimov)

- 14.00 - 14.15 Vladimir Gerasimov\*, Alexey Filozhenko, Anton Komlev *Energy Supply Of The Hybrid UUV And Information Exchange With The Onshore Control Post During The Service Of Underwater Mining Complexes* (IMTP FEB RAS)
- 14.15 - 14.30 Vladimir Kostenko\*, Nikolai Naidenko, Roman Vasilenko *Approach to the Development of a Steering Thruster Mathematical Model for the Dynamic Positioning Mode of an AUV Equipped with Manipulator* (IMTP FEB RAS)
- 14.30 - 14.45 Grigorii Eliseenko *Information Flows Management in Heterogeneous Communication Channels Between AUV and Operator* (IMTP FEB RAS)
- 14.45 - 15.00 Alexander Yurmanov\*, Roman Vasilenko, Maxim Panchuk *Algorithm of Underwater Objects Identification Considering Defects* (IMTP FEB RAS)

**Coffee break**

- 15.30 - 15.45 Sergey Kasatkin\*, Nadezhda Zlobina *Assessment of Own Noise of Underwater Glider Equipped with Combined Receivers* (IMTP FEB RAS)
- 15.45 - 16.00 Artemii Mametev\*, Alexander Pavin *Color Image Segmentation Algorithm for Autonomous Underwater Vehicles* (IMTP FEB RAS)
- 16.00 - 16.15 Anna Bykanova\*, Jurii Matvienko, Oleg Lvov *Development of a Command AUV for Controlling a Group of Hybrid AUVs for Operational Noise Field Monitoring Station* (IMTP FEB RAS)
- 16.15 - 16.30 Maxim Ivanov\*, Oleg Stepanov, Valerii Zolotarevich, Andreii Motorin *Recursive and Nonrecursive Passive Target Localization Algorithms with Bearing-Only Measurements* (ITMO University, Concern CSRI Elektropribor, JSC)
- 16.30 - 16.45 Andrey Pugachev\*, Alexey Borovik *Universal Programming Language For AUV Missions* (IMTP FEB RAS)
- 16.45 - 17.00 Iman Valizadeh\*, Jaime Lloret\_Mauri *Localization Techniques in Underwater Wireless Sensor Networks* (Valencia Polytechnic University)

**10 october 2024**

- 13-30 - 14.00 Registration of conference participants

Section **Underwater Robotics and Systems**  
(Section Chairman PhD Alexander Pavin)

- 14.00 - 14.15 Vladimir Kostenko *Calculation and Experimental Methodology for Assessing the Autonomy Parameters of the AUV* (IMTP FEB RAS)
- 14.15 - 14.30 Vladislav Mikhailov\*, Vladimir Gerasimov *Development of a Cable Communication System for an Underwater Vehicle with a Bottom Station* (IMTP FEB RAS)
- 14.30 - 14.45 Konstanin Shilin\*, Alexander Pavin *Light Neural Network for Pipeline Segmentation on a Side-Scan Sonar Images* (IMTP FEB RAS, IACP FEB RAS)
- 14.45 - 15.00 Alexander Protsenko\*, Aleksey Kabanov, Alexander Zuev, Alexey Zhirabok *The Optimal Astatic Observer for the Identification of Disturbances in Nonlinear Robotic Systems* (IMTP FEB RAS, Sevastopol State University)
- 15.00 - 15.15 Alexander Torzhkov\*, Grigorii Eliseenko, Alexander Pavin *Using Python to Create Control Systems for Unmanned Underwater Vehicles* (IMTP FEB RAS)
- 15.15 - 15.30 Andrei Medvedev\*, Vladimir Kostenko, Irina Mokeeva *Modeling the Movement of a ROV Taking into Account the Influence of a Communication Cable* (IMTP FEB RAS)
- 15.30 - 15.45 Mikhail Panin\*, Valery Bobkov, Mikhail Morozov, Alexander Inzartsev *AUV Inspection of Subsea Pipelines Using Information from an Onboard Stereo Camera* (IMTP FEB RAS, IACP FEB RAS)
- 16.00 - 16.15 Closing of the International Conference on Ocean Studies 2024
- 16.15 - 16.30 Final speech Rodionov Alexander
- 16.30 - 19.00 Final lunch

