**International Conference**

**“Theoretical and Applied Aspects  
of Geophysical Fluid Dynamics”   
dedicated to Gregory Reznik on his 80th birthday and 55th anniversary of his scientific activity:**

**“Reznik Conference”**

**Shirshov Institution of Oceanology**

**of The Russian Academy of Sciences**

**Moscow, March 24-25, 2025**

**36 Nakhimovsky prosp., ground floor, small conference hall**

**CONTACTS OF COMMITTEE**: E-mail: [*Reznik\_80@ocean.ru*](mailto:Reznik_80@ocean.ru)*,*

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**The conference will be held in hybrid mode:  
in person (P) and distance (D) presentations**

**Conference language is English**

**The schedule is based on Moscow time (****UTC +3)**

Conference PROGRAM

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| **March 24, morning session. Convener Sergey Gulev** | |
| **10:00 (P)** | **Kravtsov, S. V**. (Univ. of Wisconsin, Milwaukee, USA), **Kizner, Z**. (Depts. of Physics and Mathematics, Bar-Ilan University, Ramat-Gan, Israel), and **Berloff, P. S**.(Dept. of Mathematics*,* Imperial College London, UK). **Introduction. A jubilee view on G. M. Reznik's seminal contribution to GFD** |
| **10:20 (P)** | **Kuznetsov, E. A**. (Lebedev Physical Institute; Landau Institute; Space Research Institute; and Skoltech; Moscow, Russia) and **Mikhailov, E.A**. (Lebedev Physical Institute; Physical Dept. MSU, Moscow, Russia). **Nonlinear dynamics of slipping flows** |
| **10:40 (D)** | **Prants, S. V**.(Pacific Oceanological Institute, Vladivostok, Russia). **Lagrangian analysis of eddies in the ocean** |
| **11:00 (D)** | **Ermanyuk, E. V**.(Lavrentyev Institute of Hydrodynamics, Novosibirsk, Russia). **Attrac-tors of internal and inertial waves: wave turbulence in closed domains** |
| **11:20 (D)** | **Ingel, L. Kh.** (Research and Production Association “Typhoon”, Obninsk, Russia) **Some new problems in the theory of slope flows** |
| **11:40 (P)** | **Slunyaev, A. V**. (Institute of Applied Physics, Nizhny Novgorod, Russia) **Simulations and measurements of rogue waves in the sea** |
| **12:00 – 12:20 (tea/coffee break)** | |
| **12:20 (P)** | **Osadchiev, A. A.** (Shirshov Institute of Oceanology, Moscow, Russia) **Intense zonal freshwater transport in the Eurasian Arctic during ice‑covered season revealed by in situ measurements** |
| **12:40 (P)** | **Zavialov, P. O.** (Shirshov Institute of Oceanology, Moscow, Russia) **Some aspects of river plume dynamics** |
| **13:00 (P)** | **Chashechkin, Y. D. and Ochirov, A. A.** (Ishlinsky Institute for Problems in Mechanics, Moscow, Russia) **Classification of components of periodic flows in heterogeneous fluids** |
| **13:20 (P)** | **Ochirov, A. A. and Lapshina, K. Y.** (Ishlinsky Institute for Problems in Mechnics, Moscow, Russia) **Geometry and energy of surface waves** |
| **13:40 (P)** | **Zatsepin, A. G., Gerasimov, V. V.; Elkin, D*.* N (**Shirshov Institute of Oceanology, Moscow, Russia)**Examples of the formation of coherent structures in a stratified and rotating fluid due to nonlinear effects (laboratory experiment)** |
| **14:00 – 15:00 (Lunch)** | |
| **March 24, afternoon session. Convener Mikhail Sokolovskiy** | |
| **15:00 (D)** | **Koshel, K. V**. (Pacific Oceanological Institute, Vladivostok, Russia). **Anomalous structures on the sea surface as an object of statistical topography. Numerical modeling** |
| **15:20 (P)** | **Berloff, P. S.** (Dept. of Mathematics, Imperial College London, London, UK) **Clustering of floating tracers in the ocean** |
| **15:40 (P)** | **Stepanov, D. V. and Koshel, K. V.** (Pacific Oceanological Institute, Vladivostok, Russia) **Clustering floating parcels driven by meso- and submesoscale dynamics on the Subpolar Front of the Japan Sea** |
| **16:00 – 16:20 (tea/coffee break)** | |
| **16:20 (D)** | **Dritschel, D. G**. (Mathematical Institute, University of St Andrews, St Andrews, UK) **The onset of filamentation on vorticity interfaces** |
| **16:40 (D)** | **Sutyrin, G. G**.(Graduate School of Oceanography, University of Rhode Island, Rhode Island, USA). **The importance of being asymmetric for geophysical vortices** |
| **17:00 (P)** | **Kurgansky, M. V**. (Obukhov Institute of Atmospheric Physics, Moscow, Russia). **Theoretical model of a thin vertical conical baroclinic vortex** |
| **17:20 (D)** | **Benilov, E**.(Dept. of Mathematics and Statistics, University of Limerick, Limerick, Ireland) **Unravelling the mystery of the stability of oceanic vortices** |
| **17:40 (D)** | **Kizner, Z**. (Depts. of Physics and Mathematics, Bar-Ilan University, Ramat-Gan, Israel). **Cycloidal meandering of a mesoscale anticyclonic eddy** |
| **18:00 (D)** | **Bunimovich, L**. (Southeast Applied Analysis Center, School of Mathematics, Georgia Institute of Technology, Atlanta*,* USA). **Finite time and the predictions for strongly chaotic systems** |

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| **March 25, morning session. Convener Vladimir Zhmur** | |
| **10:00 (D)** | **Pelinovsky, E. N., Gurbatov, S. N.** (Institute of Applied Physics, Nizhny Novgorod, Russia). **Distribution functions of the initiated KdV-like solitonic gas** |
| **10:20 (D)** | **Talipova, T. G**. (Institute of Applied Physics, Russin Academy of Sciences Nizhny Novgorod, Russia) **Transformation of a soliton on a ledge** |
| **10:40 (D)** | **Chefranov, S. G., Chefranov A. S.** (Obukhov Institute of Atmospheric Physics, Russian Academy of Science, Moscow, Russia) **Exact unsteady vortex solutions to the compressible Helmholtz equations** |
| **11:00 (P)** | **Vulfson, A. N**. (Water Problems Institute; National Research University “Higher School of Economics”, Moscow, Russia) **On the possibility of approximating vertical profiles of turbulent moments of a convective boundary layer based on the theory of local similarity** |
| **11:20 – 11:40 (tea/coffee break)** | |
| **11:40 (P)** | **Kurakin, L. G.** (Water Problems Institute, Moscow; Institute for Mathematics, Mechanics and Computer Sciences, Southern Federal University, Rostov-on-Don, Russia), **Lysenko, I. A., Ostrovskaya, I. V.** (Institute for Mathematics, Mechanics and Computer Sciences, Southern Federal University, Rostov-on-Don, Russia) **and Sokolovskiy, M. A**. (Water Problems Institute, Shirshov Institute of Oceanology, Moscow, Russia). **On stability of the regular vortex polygon in the quasigeostrophic model of the point vortices in two-layer fluid** |
| **12:00 (P)** | **Kurakin, L. G.** (Water Problems Institute, Moscow; Institute for Mathematics, Mechanics and Computer Sciences, Southern Federal University, Rostov-on-Don, Russia), **Ostrovskaya, I. V.**  (Institute for Mathematics, Mechanics and Computer Sciences, Southern Federal University, Rostov-on-Don, Russia) **and Sokolovskiy, M. A**. (Water Problems Institute, Shirshov Institute of Oceanology, Moscow, Russia). **The stability of the configuration of *N* + 1 point vortices in two-layer fluid** |
| **12:20 (D)** | **Shrira, V. I.** (School of Computing and Mathematics, Keele University, UK), **Badulin, S. I.** (Shirshov Institute of Oceanology, Moscow, Russia) **and Almelah, R. B.** (Dept. of Mathematics, Faculty of Science, Misurata University, Libya) **How does wave field evolution drive oceancurrents?** |
| **12:40 – 13:40 (Lunch)** | |
| **March 25, afternoon session. Convener Mikhail Sokolovskiy** | |
| **13:40 (P)** | **Diansky, N. A.** (Faculty of Physics, Lomonosov Moscow State University, Moscow, Russia) **and Gusev, A. V.** (Marchuk Institute of Numerical Mathematics, Moscow, Russia). **Investigation of the Gulf Stream self-arrangement with using numerical and analytical techniques** |
| **14:00 (F)** | **Korotaev, G. K.** (Marine Hydrophysical Institute, Sevastopol, Russia). **Long-term changes in the stratification of the Black Sea** |
| **14:20 (P)** | **Morozov, E. G., Pisarev, S. V., Frey, D. I. and A.A. Osadchiev, A. A**. (Shirshov Institute of Oceanology, Moscow, Russia). **The Great Siberian polynya and mechanisms of its formation** |
| **14:40 (D)** | **Stepanyants, Yu. A.** (School of Sciences, University of Southern Queensland, Toowoomba, Australia) **Radiation phenomena in geophysics** |
| **15:00 – 15:20 (tea/coffee break)** | |
| **15:20 (P)** | **Arakelyan, E. M.** ([Moscow Institute of Physics and Technology (National Research University,](https://www.elibrary.ru/org_items.asp?orgsid=145)  Dolgoprudny, Russia)**, Zhmur, V. V.** (Shirshov Institute of Oceanology, Moscow, Russia; Moscow Institute of Physics and Technology, Dolgoprudny, Russia).**, and Chkhetiani, O. G.** (Obukhov Institute of Atmospheric Physics, Moscow, Russia). **Composite structure of Jupiter's Great Red Spot** |
| **15:40 (P)** | **Gulev, S. K., Zyulyaeva, Yu. A.** (Shirshov Institute of Oceanology, Moscow, Russia)**, and Sokolovskiy, M. A.** (Water Problems Institute; Shirshov Institute of Oceanology, Moscow, Russia). **A three-layer model of polar stratospheric vortex** |
| **16:00 (P)** | **Riccardi, G**.(Dept. of Mathematics and Physics, University of Campania “Luigi Vanvitelli”, Rome, Italy) **On the time evolution of the Schwarz function of the boundary of a uniform planar vortex moving in an inviscid fluid** |
| **16:20 (D)** | **Kamenkovich, I., Lu, Y.** (Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, USA)**, and Berloff, P.** (Dept. of Mathematics, Imperial College London, London, UK). **Beyond the Flux-Gradient Relation in Parameterizing Lateral Eddy-Induced Transport** |
| **16:40 (D)** | **Flierl, G. R. and Morrison, P**. (Dept. of Earth, Atmospheric, and Planetary Sciences MIT, Cambridge, USA) **Synthetic annealing and vortex structures** |
| **17:00 – 17:20 (tea/coffee break)** | |
| **17:20 (D)** | **Kravtsov, S. V**. (University of Wisconsin, Milwaukee, School of Freshwater Sciences, Atmospheric Sciences group, Milwaukee, USA), **Rudeva, I. A.** (Bureau of Meteorology, Melbourne, Victoria, Australia), **Gulev, S. K.** (Shirshov Institute of Oceanology, Moscow, Russia). **Reconstructing spatiotemporal characteristics of sea-level pressure variability in reanalysis data set using a feature-tracking approach** |
| **17:40 (D)** | **Reinaud, J. N**. (Mathematical Institute, University of St Andrews, St Andrews, UK) **Vortex interactions over bathymetry** |
| **18:00 (D)** | **McWilliams, J. C.** (Department of Atmospheric and Oceanic Sciences, University of California, Los Angeles, USA) **Coherence in the Ocean** |
| **18:20 (P)** | **Zavialov, P. O.** (Shirshov Institute of Oceanology, Moscow, Russia). **Concluding remarks** |
| **18:40 (D)** | **Reznik, G. M.** (Shirshov Institute of Oceanology, Moscow, Russia). **Close** |
| **18:45 – 20:45 (Buffet reception)** | |

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