

Program of the International conference

“Vortices and coherent structures: from the ocean to microfluids”

(Russia, Vladivostok, 28-31 August 2017)

The 1st day, 28 August (Monday). Hall A (ground floor). Pacific Oceanological Inst., Baltiiskay St., 43

Section 1. Theory and modeling of vortices

(9.00 – 10.00) Registration

(9.45 – 10.00) Opening address

Invited talks

(10.00 - 10.30) Mark Stremmer (Virginia Polytechnic Institute and State University, Virginia, USA) **“Mathematical modeling of vortex wake dynamics”**.

(10.30-11.00) Yuli Chashechkin (Institute for Problems in Mechanics, RAS, Moscow) **“Indivisibility of vortices and waves in differential fluid mechanics”**.

(11.00 - 11.30) Yasuhide Fukumoto (Institute of Mathematics for Industry, Kyushu University, Japan). **“Gyroscopic analogies of rotating flows of a strongly stratified fluid confined in a spheroid”**.

Break (11.30 - 11.45)

Regular talks

(11.45 - 12.05) M. Sokolovskiy (Water Problems Institute, RAS, Moscow, Russia), J. Verron (Institut des Goscience de l'Environnement, Grenoble, France), X. Carton (Laboratoire d'Océanographie Physique et Spatiale, Brest, France) **“Interaction of two surface vortex patches”**.

(12.05 - 12.25) Xu Sun (College of Mechanical and Transportation Engineering, China University of Petroleum-Beijing), Zehua Ye, Jiazhong Zhang (Xi'an Transport University, Xi'an, China) **“Vortices and Vortex-Induced Vibrations of a Membrane Wing at Low Reynolds Numbers”**.

(12.25 - 12.45) S. Kozitskiy (Pacific Oceanological Institute, RAS, Vladivostok) **“Structures and vortices in 3D multi-component convection”**.

Lunch (12.45 – 14.30)

Regular talks

(14.30 - 14.50) A. Maksimov (Pacific Oceanological Institute, RAS, Vladivostok) **“Microstreaming induced by bubble oscillations and applications to the ultrasonic cleaning”**.

(14.50 - 15.10) E. Ryzhov (Pacific Oceanological Institute RAS, Vladivostok) **“Regular and chaotic dynamics of an elliptic vortex in a periodic strain flow”**.

(15.10 - 15.30) K. Koshel (Pacific Oceanological Institute RAS, Vladivostok) “**Nonlinear resonances in a two-layer shear flow interacting with two vortices in the bottom layer**”.

(15.30 -15.50) M. Uleysky (Pacific Oceanological Institute RAS, Vladivostok), A. Didov (Far Eastern Federal University, Vladivostok) “**Nonlinear resonances in the ABC flow**”.

(15.50 -16.10) A. Shavlyugin (Vladivostok State University of Economics and Service, Vladivostok) “**Vortex flows inside and outside the circular cylinder: instability, interactions and steady structures**”.

(16.10 -16.30) A. Kazansky (Institute of Automation and Control Processes, RAS, Vladivostok). “**Compact compensated eddies and constrained vorticity**”.

Break and free discussion (16.30 - 17.00)

The 2nd day, 29 August (Tuesday). Hall A (ground floor). Pacific Oceanological Inst., Baltiiskay St., 43

Section 2. Eddies and circulation in the ocean

Invited talks

(10.00-10.30) Slava Lobanov (Pacific Oceanological Institute, RAS, Vladivostok)

“**Academician V.I. Il'ichev and studies of mesoscale eddies in the northwestern Pacific**”.

(10.30-11.00) Sergey Prants (Pacific Oceanological Institute, RAS, Vladivostok)

“**Lagrangian analysis of eddies in the ocean**”.

(11.00-11.30) Andrey Zatsepin (P.P. Shirshov Institute of Oceanology, RAS, Moscow)

“**Submesoscale eddies at the narrow Black Sea shelf**”.

Break (11.30 -11.45)

Regular talks

(11.45 - 12.05) J. Verron (Institut des Goscience de l'Environnement, Grenoble, France), X. Carton (Laboratoire de Physique des Oceans, UBO-CNRS-IFREMER, Brest, France) D. Ciani (Istituto dei Sistemi Complessi, Roma, Italy), M. Sokolovskiy (Water Problems Institute, RAS, Moscow, Russia). “**On the merging of surface-intensified oceanic eddies**”.

(12.05 - 12.25) G. Riccardi (University of Campania “Luigi Vanvitelli”, Caserta, Italy and CNR-INSEAN, National Research Council of Italy - Maritime Research Center Rome, Italy). “**A Complex Analysis Approach to the Motion of Uniform Vortices**”.

(12.25 - 12.45) M. Sokolovskiy, B. N. Filyushkin (Water Problems Institute of RAS, Moscow, Russia). “**Modeling of evolution of an intrathermocline lens over the Lofoten basin**”.

Lunch (12.45 – 14.35)

Regular talks

(14.35 - 14.55) I. Bashmachnikov (St. Petersburg State University, Institute of Earth Sciences, Nansen International Environmental and Remote Sensing Centre, St. Petersburg), M. Sokolovskiy (Water Problems Institute, RAS, Moscow, Russia), T. Belonenko (St. Petersburg State University, Institute of Earth Sciences, St.Petersburg, Russia), X. Carton (Laboratoire de Physique des Oceans, UBO-CNRS-IFREMER, Brest, France) “**On stability of the Lofoten Vortex in the Norwegian Sea**”.

- (14.55-15.15) **D. Stepanov** (Pacific Oceanological Institute, RAS, Vladivostok)
“Wintertime anticyclonic eddies in the East-Sakhalin Current based on high resolution numerical simulation”.
- (15.15 - 15.35) **A. Andreev**, , M. Bydyansky, M. Uleysky, S. Prants (Pacific Oceanological Institute, RAS, Vladivostok). “Mesoscale eddies in the Alaskan Stream area and the eastern Bering Sea”.
- (15.35-15.55) **D. Elkin**, A. Zatsepin (P.P. Shirshov Institute of Oceanology, RAS, Moscow).
“Sinking of less dense water in a bottom Ekman layer formed by a coastal downwelling current over a sloping bottom”.
- (15.55 - 16.15) **T. Belonenko** (St. Petersburg State University, Institute of Earth Sciences, St. Petersburg). “The problem of mesoscale eddy identification based on satellite altimetry”.
- (16.15 - 16.35) **V. Ponomarev**, P. Fayman, M. Bydyansky, M. Uleysky, S. Prants, V. Dubina (Pacific Oceanological Institute, RAS, Vladivostok). “Simulation of mesoscale and sub-mesoscale eddies in the northwestern part of the Japan Sea”.

Break and free discussion (16.35 - 17.00)

The 3rd day, 30 August (Wednesday).

Section 3. Theory and modeling of flows. (Hall A, ground floor. Pacific Oceanological Inst., Baltiiskay St., 43)

Invited talks

- (10.00 - 10.30) **Gregory Reznik** (P.P. Shirshov Institute of Oceanology, RAS, Moscow)
“Nonstationary boundary layers in stratified fluid”.
- (10.30 - 11.00) **S. Churilov** (Institute of Solar-Terrestrial Physics, RAS, Irkutsk)
“Splitting of the neutral Rayleigh mode due to a weak stratification”.

Break (11.00 - 11.15)

Regular talks

- (11.15 - 11.35) **N. Vazaeva** (A.M.Obukhov Institute of Atmospheric Physics, RAS, Moscow)
“Development of the mesoscale circulation asymmetry in the atmospheric boundary layer: modeling and case study”.
- (11.35 - 11.55) **S. Demyshev, O. Dimova**, (Marine Hydrophysical Institute, RAS, Sebastopol).
“Modeling of the Black sea circulation with resolution of the meso- and submesoscale dynamic processes”.
- (11.55 - 12.15) **Peihua Feng** (Northwest Polytechnic University, Xi’an, China)
“Behaviors of heteroclinic orbits in the Rayleigh-Bernard flow under a perturbation from boundary oscillation”.

Lunch (12.15 – 14.00)

Regular talks

- (14.00 - 14.20) **M. Aleksanina**, V. Levin, S. Dyakov, A. Eremenko, A. Kazansky (Institute of Automation and Control Processes, RAS, Vladivostok). “Research of atmospheric Karman Vortex Street in a northwest Pacific on satellite imagery”.

(14.20 - 14.40) D. Kachulin (Novosibirsk State University, Novosibirsk), A. Dyachenko (Landau Institute of Theoretical Physics, Moscow), V. Zakharov (Lebedev Physical Institute, Moscow). **“Envelope equation for gravity waves on deep water”**.

(14.40 - 15.00) M. Kalashnik, O. Chkhetiani (A.M.Obukhov Institute of Atmospheric Physics, RAS, Moscow). **“Stability of jet flows in a rotating shallow water layer”**.

(15.00 - 15.20) A. Lobasov (Siberian Federal University, Krasnoyarsk), A. Minakov (Institute of Thermophysics, RAS, Novosibirsk) **“Slip boundary conditions effect on the Dean vortices and engulfment regime in T-shaped microchannel”**.

(15.20 - 15.40) V. Liapidevskii, (Lavrentyev Institute of Hydrodynamics, Novosibirsk), N Gavrilov, I. Yaroshchuk, F. Khrapchenkov (Pacific Oceanological Institute, RAS, Vladivostok). **“Transformation of large amplitude internal waves over a shelf”**.

Break and free discussion (16.00 - 17.00)

The 3rd day, 30 August (Wednesday).

Section 4. Laboratory and field experiments (Hall B, ground floor. Pacific Oceanological Inst., Baltiiskay St., 43)

Regular talks

(14.00-14.20) Y. Chashechkin, Y. Zagumennyi (Institute for Problems in Mechanics, RAS, Moscow). **“Formation of vortices in 2D flows around obstacles”**.

(14.20 - 14.40) Y. Chashechkin, D. Ilynykh (Institute for Problems in Mechanics, RAS, Moscow). **“Fast vortices of a falling drop impact”**.

(14.40 - 15.00) Y. Chashechkin, N. Dimitrieva (Institute for Problems in Mechanics, RAS, Moscow). **“Vortices and waves in flows around a free balanced or sinking neutral buoyancy body in a stratified environment”**.

(15.00 - 15.20) Y. Chashechkin, T. Chaplina (Institute for Problems in Mechanics, RAS, Moscow). **“Experimental investigation of marker’s transport in a compound vortex”**.

(15.20 - 15.40) S. Smirnov (Institute of Automation and Control Processes, RAS, Vladivostok, Russia), I. Yaroshchuk, A. Shvyrev, A. Pivovarov, A. Samchenko, A. Kosheleva. **“On study of resonant oscillations in the Posyet Gulf”**.

(15.40 - 16.00) V. Shchurov (Pacific Oceanological Institute, RAS, Vladivostok).

“Low-frequency acoustic interferential field vortex structure in waveguide of the shallow sea”.

(16.00 - 16.20) O. Chkhetiani (A.M.Obukhov Institute of Atmospheric, RAS, Moscow). **“Emergence of sub (super)-rotation and jet flows from small-scale quasi-two-dimensional vortices in laboratory experiments”**.

Posters (14 - 17) (ground floor. Pacific Oceanological Inst., Baltiiskay St., 43)

A. Ayouche, X. Carton, M. Morvan (Laboratoire de Physique des Oceans, UBO-CNRS-IFREMER, Brest, France) **“Vortices in the Arabian Sea”**.

P. Zhuravlev, Permyakov M., Malikova N., Semykin V (Pacific Oceanological Institute, RAS, Vladivostok). **“Numerical modeling of the boundary layer influence on the vortex structures”**.

A. Baranov (Far Eastern Federal University, Vladivostok), M. Permyakov Pacific Oceanological Institute, RAS, Vladivostok). **“The Contour Advection Method for Simulation of the Vortex Structures Evolution near Topographic Feature”**.

A. Shupikova, A. Kazansky” (Institute of Automation and Control Processes, RAS, Vladivostok). **“Searching and reconstruction 3D velocity field of jet streams and eddies.**

17.00 17.30 Closing remarks (Hall A, ground floor. Pacific Oceanological Inst., Baltiiskay St., 43)

17.30 - 20.00. Farewell party (Hall A, ground floor. Pacific Oceanological Inst., Baltiiskay St., 43)

4th day, 31 August (10.00 Thursday, the place will be indicated). A half-day bus tour and free time (City tour via two bridges, University campus at the Russki Island, Ajax sea beach).