**CURRICULUM VITAE**



**PETER O. ZAVIALOV**

**36, Nakhimovsky Prospect Ave., 117997, Moscow, Russia, Phone: (+7-499)-1245994 (office), Fax: (7-499)-1245983, E-mail:** [**peter@ocean.ru**](mailto:peter@sio.rssi.ru)

**Date of birth:** August 5, 1966

**Professional experience**:

2007-present: Deputy Director, Shirshov Institute of Oceanology, Russian Academy of Sciences;

2005–present: Department Head, Shirshov Institute of Oceanology, Russian Academy of Sciences;

2001–2005: Leading Researcher, Shirshov Institute of Oceanology, Russian Academy of Sciences;

1999–2001: Researcher, Shirshov Institute of Oceanology, Russian Academy of Sciences;

1994–1999: Visiting Lecturer/Researcher, University of Rio Grande, Brazil;

1992–1994: Research Assistant, Oregon State University, USA;

1989–1992: Graduate Student, State Oceanographic Institute, Russia;

1983-1989: Student, Moscow State University, Russia.

**Education:**

•M.Sc. (Russian equivalent) in physics– 1989, Moscow State University;

•Ph.D. (Russian equivalent -“Candidate of Sciences”) in physical oceanography – 1992, State Oceanographic Institute, Moscow, Russia;

•D.Sc. (“Doctor of Sciences” - Habilitation) in oceanography – 2000, Shirshov Institute of Oceanology, Moscow, Russia.

**Honors, awards, appointments:**

Associate ("Corresponding") Member, Russian Academy of Sciences (2016);

Honorary Professor, Russian Academy of Sciences (2015);

Diploma for the best article published by MAIK/Nauka publishers (2011);

Certificate of commendation, WCRP/IHDP/IGPB Young Scientist Contest (2001);

EC member and national contact, IAPSO;

Member and national contact, BRICS WG on ocean and polar research;

Lead author, Working Group 2, IPCC Assessment Report 5 (2011-2013);

Member of editorial board, Oceanology journal;

Member of editorial board, Oceanological Research journal;

Member of editorial board, Water Resources journal;

Member of editorial board, Fundamental and Applied Hydrophysics journal;

Member of editorial board, Geosystems of Transition Zones journal.

**Summary statement of research interests and experience**

I am a physical oceanographer with background in general physics. At the early stages of my career, at the State Oceanographic Institute, Russia, and, subsequently, Oregon State University, USA, my research mainly focused on small-scale processes and mixing in the upper layer of the ocean. Later, during my 5-years long work at the University of Rio Grande, Brazil, I shifted towards observational regional oceanography of the Southwestern Atlantic ocean, comprising the Brazil-Malvinas Confluence region and the adjacent shelf areas. At that time, I also started to focus on continental freshwater discharges into the ocean, and their impacts on coastal circulations. My results of that period were associated with the assessment of the impacts of freshwater runoff into the ocean from the La Plata Estuary and the Patos lagoon. After returning to Russia and accepting a position at the Shirshov Institute of Oceanology, my interests drifted further towards coastal oceanography, as well as marginal and inland seas, and terrestrial water bodies. In particular, I have gathered considerable experience in field work in the northeastern shelf of the Black Sea, focusing on anthropogenic pollution of the coastal zone, and interactions between the local river discharges and mesoscale shelf circulations. Further, since 2002, I have led a research programme dedicated to the Aral Sea, a major salty lake in the Central Asia, presently undergoing severe desiccation and salinization attributed to anthropogenic diversions of water from tributary rivers, as well as the climate change effects. This research programme, which included 21 field surveys of the lake accomplished to date, helped to reveal the present physical regime of the water body, assess details of its water budget, and formulate some predictions for the future. My secondary lines of research also comprise new methods of remote sensing of the coastal zone, and groundwater – sea water interactions. The geographic areas of my interest and some expertise include, in addition to those mentioned above, the South China Sea and the Taiwan Strait, the Kara Sea, the Caspian Sea, and Lake Issyk Kul.

**Ph.D. students supervised:**

A.A. Osadchiev – successful completion in 2013;

A.S. Izhitskiy - successful completion in 2014;

N.V. Zhurbas - successful completion in 2015;

V.V. Pelevin - successful completion in 2017;

N.Yu. Andrulionis – in progress;

S.A. Rozhdestvenskiy – in progress.

**Publications:** Overall, about 90 papers and 4 books. Only the most important/relevant are listed below. For more complete list, please see <https://scholar.google.ru/citations?user=4p1pW50AAAAJ&hl=en>

• Korotenko, K.A., P.O. Zavialov, Y.-Y.Chen, and H.H. Lee, 2020. A study of circulation, turbulence, and tidal stream resources in the Taiwan Strait. Front. Mar. Sci., 7:368, doi: 10.3389/fmars.2020.00368

• Osadchiev A.A., Frey D.I., Shchuka S.A., Tilinina N.D., Morozov E.G., Zavialov P.O. Structure of the freshened surface layer in the Kara Sea during ice-free periods // Journal of Geophysical Research. 2020, doi: 10.1029/2020JC016486

• Izhitskaya, E.S., A.V. Egorov, P.O. Zavialov, E.V. Yakushev, and A.S. Izhitskiy, 2019. Dissolved methane in the residual basins of the Aral Sea. Enironmental Research Letters, ERL-105929.R2, doi: [10.1088/1748-9326/ab0391](http://iopscience.iop.org/article/10.1088/1748-9326/ab0391).

• Zavialov, P.O., Pelevin, V.V., Belyaev, N.A., Izhitskiy, A.S., Konovalov, B.V., Krementskiy, V.V., Goncharenko, I.V., Osadchiev, A.A., Soloviev, D.M., Garcia, C.A.E., Pereira, E.S., Sartorato, L., Moller Jr., , O.O., 2018. High resolution LiDAR measurements reveal fine internal structure and variability of sediment-carrying coastal plume, Estuarine, Coastal and Shelf Science, 205, 40-45, doi:10.1016/j.ecss.2018.01.008.

• Zavialov, P. O., Izhitskiy, A. S., Kirillin, G. B., Khan, V. M., Konovalov, B. V., Makkaveev, P. N., Pelevin, V. V., Rimskiy-Korsakov, N. A., Alymkulov, S. A., and Zhumaliev, K. M., 2018. New profiling and mooring records help to assess variability of Lake Issyk-Kul and reveal unknown features of its thermohaline structure, Hydrol. Earth Syst. Sci., 6279-6295, doi: 10.5194/hess-22-6279-2018.

• Zavialov, P.O., A.S. Izhitskiy, and R.O. Sedakov, 2018. Sea of Azov waters in the Black Sea: Do they enhance wind-driven flows on the shelf? IN: M.G. Velarde, R.Yu. Tarakanov, A.V. Marchenko (Eds): The Ocean in Motion. Circulation, Waves, Polar Oceranography, 978-3-319-71933-7, Springer, ISBN 978-3-319-71934-4, DOI: 10.1007/978-3-319-71934-4, pp. 461-474.

• Osadchiev A., A. Izhitskiy, P. Zavialov, V. Kremenetskiy, A. Polukhin, V. Pelevin, Zh. Toktamysova, 2017. Structure of the buoyant plume formed by Ob and Yenisei river discharge in the southern part of the Kara Sea during summer and autumn. Journal of Geophysical Research, DOI:10.1002/2016JC012603.

• Osadchiev, A. A., K. A. Korotenko, P. O. Zavialov, W.-S. Chiang, and C.-C. Liu (2016) Transport and bottom accumulation of fine river sediments under typhoon conditions and associated submarine landslides: case study of the Peinan River, Taiwan. Natural Hazards and Earth System Sciences, doi:10.5194/nhess-16-41-2016.

• Izhitskiy A. S., P. O. Zavialov, P.V. Sapozhnikov, G. Kirillin, H.P. Grossart, O.Y. Kalinina, A.K. Zalota, I.V. Goncharenko, A.K. Kurbaniyazov, 2016. Present state of the Aral Sea: diverging physical and biological characteristics of the residual basins. // Scientific Reports 6:23906, DOI: 10.1038/srep23906

• Roget, E., Khimchenko, E., Forcat, F., and Zavialov, P.: The internal seiche field in the changing South Aral Sea (2006–2013), Hydrol. Earth Syst. Sci., 21, 1093-1105, doi:10.5194/hess-21-1093-2017, 2017.

• Sharma, A., H.-P. Huang, P. Zavialov, and V. Khan, 2017. Impact of desiccation of Aral Sea on the regional climate of Central Asia using WRF model. Pure and Applied Geophysics, DOI 10.1007/s00024-017-1675-y, 14 pp.

• Korotenko, K.A., A.A. Osadchiev, P.O. Zavialov, R.C. Kao, and C.-F. Ding, 2014, Effects of bottom topography on dynamics of river discharges in tidal regions: Case study of twin plumes in Taiwan Strait, Ocean Sci. Discuss., 11, 1–41, doi:10.5194/osd-11-1-2014

• Korotenko, K.A., A.A. Osadchiev, P.O. Zavialov, R.C. Kao, and C.-F. Ding, 2014, Effects of bottom topography on dynamics of river discharges in tidal regions: Case study of twin plumes in Taiwan Strait, Ocean Sci., 10, 863-879, doi:10.5194/os-10-863-2014.

• Portner, H.-O., D.M. Karl, P.W. Boyd, W.W.L. Cheung, S.E. Lluch-Cota, Y. Nojiri, D.N. Schmidt, and P.O. Zavialov, 2014: Ocean systems. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 411-484.

•Izhitskiy, A.S., P.O. Zavialov, E. Roget, H.-P. Huang, and A.K. Kurbaniyazov, 2014, On thermohaline structure and circulation of the Western Large Aral Sea from 2009 to 2011. J. Marine Systems, 129, 234-247, doi: 10.1016/j.jmarsys.2013.06.013

•Zavialov, P.O., R.-C. Kao, V.V. Kremenetskiy, V.I. Peresypkin, C.-F. Ding, J.-T. Hsu, O.V. Kopelevich, K.A. Korotenko, Y.-S. Wu, P. Chen, 2012. Evidence for submarine groundwater discharge on the southwestern shelf of Taiwan. Continental Shelf Research, 34, 18-25, doi: 10.1016/j.csr.2011.11.010

•Osadchiev, A.A., and P.O. Zavialov, 2013. Lagrangian model for surface-advected river plume. Continental Shelf Research, 58, 96–106, doi: 10.1016/j.csr.2013.03.010

•Kao, R.-C., P.O. Zavialov, and C.-F. Ding, 2013. Investigation and assessment of submarine groundwater discharge of Ping-Tung nearshore area in southwestern Taiwan. Irrigation and Drainage, 62 (Suppl. 1), 10-17, doi: 10.1002/ird.1789.

•Zavialov, P.O., A.A. Ni, D.P. Ishniyazov, T.V. Kudyshkin, A.K. Kurbaniyazov, and D. Mukhamedzhanova, 2009. Ongoing changes in salt composition and dissolved gases in the Aral Sea. Aquatic Geochemistry, 15, 263-275, doi: 10.1007/s10498-008-9057-9.

•Zavialov, P.O., A.A. Ni, T.V. Kudyshkin, A.K. Kurbaniyazov, and S.N. Dikarev, 2009. Five years of field hydrographic research in the Large Aral Sea (2002-2006). J. Marine Systems, 76, 263-271, doi: 10.1016/j.jmarsys.2008.03.013.

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•Oberhansli, H., and P. Zavialov, 2009. Aral Sea Basin hydrological, chemical, and biological dynamics today, compared with trends of the past 50 years. J. Marine Systems, 76, 251-253, doi:10.1016/j.jmarsys.2008.08.001

•Roget, E., P. Zavialov, V. Khan, and M. A. Muñiz, 2009. Geodynamical processes in the channel connecting the two lobes of the Large Aral Sea. Hydrol. Earth Syst. Sci., 13, 2265-2271.

•Zavialov, P.O., A.A. Ni, T.V. Kudyshkin, A.K. Kurbaniyazov, and S.N. Dikarev, 2008. Five years of field hydrographic research in the Large Aral Sea (2002-2006). J. Marine Systems, doi: 10.1016/j.jmarsys.2008.03.013.

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•Zavialov, P.O., 2007. Effects of river discharge on coastal and inland seas: Anthropogenic impact and climate variability. IN: Proc. 2007 Taiwan-Russia Bilateral Symposium on Water and Environmental Technology, Tainan, Taiwan, R.O.C., 27-42.

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