

PERSONAL DATA

IGOR P. SEMILETOV

PLACE OF BIRTH: Keseg, Hungary (Russian Citizen)

EDUCATION:

B.S., Oceanography, Far-Eastern State University, Vladivostok, Russia, 1977

M.S., Oceanography, P.P. Shirshov Institute of Oceanology, Moscow, Russia, 1987

Ph.D., Chemical Oceanography, P.P. Shirshov Institute of Oceanology, Moscow, Russia, 1988

Doctor of Science, Chemical Oceanography, P.P. Shirshov Institute of Oceanology, Moscow, Russia, 2005

EXPERIENCE:

Research Professor, International Arctic Research Center, University of Alaska Fairbanks, since 2012

Research Associate Professor, International Arctic Research Center, University of Alaska Fairbanks, 2003-2012

Visiting Scientist, International Arctic Research Center, UAF, 2001-2003

Chief Scientist, First, Second, and Third US-Russia Drilling Projects in the East Siberian Arctic Shelf (April 2011, March-April 2012, April 2013)

Chief Scientist, International Siberian Shelf Study Cruise (ISSS-08), 2008

Chief Scientist, First International Polar Year Expedition in the Laptev Sea, 2007 (March-April)

Chief Scientist, First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, and Ninth US-Russia joint cruises in the Arctic Siberian seas, 2003-2013

U.S. Member, Steering Committee of the Russian-American Initiative on Shelf-Land Environments in the Arctic (RAISE), 2002-2005

Scientific Coordinator, joint USA-Russia-Sweden Carbon Studies in the Arctic Ocean, 2005

Leader, IARC/UAF team that explored the CO₂ flux across the sea ice at Barrow, 2002-2003

Member, PICES Working Group: Carbon Dioxide in the North Pacific, 1998-2004.

Member, Far-Eastern Branch, National Committee of the International Global Biosphere Project (IGBP), 1996-2005

Director, Russian Office of the Bering Sea Impact Study Project of the International Arctic Scientific Committee, 1995-2000

Member, Russian Federation Steering Committee of the RAISE, 1996- 2002

Scientific Leader, Laboratory of Arctic Research, Pacific Oceanological Institute, Far-Eastern Branch of Russian Academy of Sciences (FEBRAS), 2001-present

Head, Laboratory of Carbon Geochemistry in Polar Regions, Pacific Oceanological Institute, Far-Eastern Branch of Russian Academy of Sciences (FEBRAS), 1997-2001

Director, Arctic Regional Center, FEBRAS & Far Eastern State University, 1996-2001

Editor, Proceedings of the Arctic Regional Center, FEBRAS, Vladivostok, Russia, 1998-2005

Chief Scientist, all marine expedition of FEBRAS in the Arctic seas (fourteen in total), 1993-2001.

Junior Research Scientist, Research Scientist, Senior Research Scientist, Laboratory of Carbon Geochemistry in Polar Regions, Pacific Oceanological Institute, FEBRAS, Vladivostok, Russia, 1977-1997

Member, 26th and 34th Soviet Antarctic Expeditions, 1980-1981 and 1989-1990

PROFESSIONAL ORGANISATIONS:

American Geophysical Union

SYNERGISTIC ACTIVITIES AND AWARDS:

Award of the International Scientific Foundation, 1994

Award of the Government of the Russian Federation and International Science Foundation, 1995

Principal Investigator, Study of air inclusions (volume and composition) in the Vostok Ice Core, Sub- Project with the Arctic and Antarctic Research Institute and Mining Institute, Sankt-Petersburg, Russia, 1983-1990

Fellow of the Scientific Council, Pacific Oceanological Institute, Far Eastern Branch of Russian Academy of Sciences, 1998-2004

Award of the MacArthur Foundation, 2001

Co-Author (with N. Shakhova) of the Intergovernmental Panel on Climate Change Fifth Assessment report, 2009.

Co-Author (with N. Shakhova) of the WWF International Arctic Programme: Arctic Climate Feedbacks: Global Implications, 2009.

Scientific Adviser (Arctic&Subarctic marine studies) to Chairman of Headquarters, Far Eastern Branch of Russian Academy of Sciences, 2005-present

Guest Editor, *Biogeosciences*- Special Issue: "Land-shelf-basin interactions of the Siberian Arctic" (with O. Gustafsson, N. Shakhova, and L. Anderson), 2010-2011.

Principal Investigator of the NSF (2003-2004; since 2009), NOAA (since 2005), Russian NSF (numerous grants since 1993), and FEBRAS/IARC-funded (since 2005) Arctic marine projects.

Reviewer of the NSF (since 2011), NOAA (since 2007), NASA (since 2005), European Science Foundation (since 2010), Swiss Science Foundation (since 2011), Russian Foundation for Basic Research (since 2002).

COLLABORATORS:

Samantha Joy and Vladimir Samarkin (UGA, Atlanta, USA), Vladimir Romanovsky, Segey Marchenko, and Dmitry Nicolsky (GI UAF, Fairbanks, USA), Dave Hilton (SDSU SIO, La Jolla, USA), Gleb Panteleev (IARC UAF, Fairbanks, USA), Orjan Gustafsson (SU, Stockholm, Sweden), Walter Oechel (SDSU, San Diego, USA), Tom Roeckman and Celia Sapart (UU, Utrecht, Netherlands), Don Porcelli (OU, Oxford, UK), Leif Anderson (UG, Gothenburg, Sweden), Eddy Carmack and Rob Macdonald (IOS, Sidney, Canada), Bart vanDongen (Manchester University); Per Andersson (Stockholm University Natural Museum), Oleg Dudarev, Anatoly Salyuk, Vladimir Iosoupov, Victor Karnaukh & Denis Kosmach (POI FEBRAS, Vladivostok, Russia), Eugeny Romankevich, Leopold Lobkovsky, Alexander Vetrov and Petr Makkaveev (P.P. Shirshov Institute of Oceanology, Moscow, Russia), Nikolai Romanivskii, Vladimir Tumskoy, Eugeny Chuvilin, and Andrey Koshurnikov (Moscow State University), Irina Repina (Institute of Atmospheric Physics).

1. PUBLICATIONS (h-factor=21, 2 papers in *Science*, 1 - in *Nature*, 1- in *Nature Geosciences*, 1 - in *PNAS*):

Books

1. *Semiletov I.P.* (ed.), 2000, Hydrometeorological and biogeochemical studies in the Arctic,

Proc. Arctic Regional Center, Vladivostok, Dalnauka Press, v. 2, 232p (in Russian)

2. Semiletov I. P. (ed.), 2001, Changes in the atmosphere-land-sea system in the Amerasian Arctic. *Proc. Arctic Regional Center*, Vladivostok, Dalnauka Press, v. 3, 277p. (in English)
3. Sergienko, V.I. and I.P. Semiletov (eds.), 2006, FEBRAS marine investigations in the Arctic. *Proceedings of the Arctic Regional Center*, vol. 4, 213 p., Vladivostok: Dalnauka, (in Russian).

Chapters in peer-reviewed books

4. Semiletov I. and N. Shakhova, 2013. Ocean gas balance (carbon dioxide and methane) and climate. In: E.A. Romankevich, ed., *Advances in modern oceanography*, Book 2, Nauka Press, Moscow, in press
5. Shakhova N. and I. Semiletov, 2012. Trace gas emissions from sub-sea permafrost. In: *Climate Change and the Cryosphere: Snow, Water, Ice and Permafrost in the Arctic (SWIPA): An Arctic Council 'Cryosphere Project' in Cooperation with IASC, CliC and IPY*, A report of the Arctic Monitoring and Assessment Program (AMAP), 97-104
6. Shakhova N.E., and I.P. Semiletov, 2009. Methane Hydrate Feedbacks, In: Martin Sommerkorn & Susan Joy Hassol, eds., *Arctic Climate Feedbacks: Global Implications*, Published by WWF International Arctic Programme August, 2009, ISBN: 978-2-88085-305-1, p. 81-92.
7. Shakhova N.E., Sergienko V.I., Semiletov I.P., Salyuk A.N., Bel'cheva N.N., Kosmach D.A., 2008. On the role of the East Siberian Arctic Shelf in the modern methane cycle. In: N.P. Laverov et al., eds., *Environmental and Climate Changes and catastrophes*, Vol. 6, A.M. Obukhov Institute of Atmospheric Physics Russian Academy of Sciences, Moscow, p. 164-176
8. Shakhova N.E. and I.P. Semiletov, 2008. Characteristical features of carbon cycle in the shallow shelf of the eastern sector of Russian Arctic. In: N.P. Laverov et al., eds., *Environmental and Climate Changes and catastrophes, Vol.4, A.M. Obukhov Institute of Atmospheric Physics Russian Academy of Sciences, Moscow*, p. 167-181.
9. Shakhova, N., I. Semiletov, A. Salyuk, N. Belcheva, D. Kosmach, 2007. Methane anomalies on a shelf of the Arctic seas of Russia. In: V.A. Akulichev & V.P. Chelomin, eds., *Far Eastern Seas of Russia, Book 2, Nauka Press, Moscow*, p. 353-364.
10. Semiletov I.P., Dudarev O.V., Pipko I.I., Salyuk A.N., and N.E. Shakhova, 2007. Marine studies in the Arctic regions at the third millennium. In: V.A. Akulichev, ed., *Far Eastern Seas of Russia, Book 2, Nauka Press, Moscow*, p. 309-324.
11. Pipko I.I., Semiletov I.P., Tischenko P.Ya., Pugach S.P., and N. Savelieva, 2007. Dynamics of the carbonate system and CO₂ fluxes between the ocean and atmosphere in a coastal shelf zone of the East-Siberian sea during autumn. In: V.A. Akulichev, ed., *Far Eastern Seas of Russia, Book 2, Nauka Press, Moscow*, 325-352.
12. Savelieva N.I., Nedashkovsky A.P., Pipko I.I., Semiletov I.P., and s.P. Pugach, 2007. Interannual variability of thermohaline structure and hydrochemical characteristics of the coastal waters in a shelf zone of the East-Siberian Sea. In: V.A. Akulichev, ed., *Far Eastern Seas of Russia, Book 2, Nauka Press, Moscow*, 365-381.
13. Dudarev O.V., Charkin A.N., Semiletov I.P., Botsul A.I., and D.A. Kosmach, 2007. Modern sedimentation on the near-continental shelf of the East-Siberian Sea. In: V.A. Akulichev, ed., *Far Eastern Seas of Russia, Book 2, Nauka Press, Moscow*, 382-391.
14. Dudarev O.V., Charkin A.N., Semiletov I.P., Salyuk A.N., Shilo I.N., and E.A. Spivak, 2007.

Transformation of the sedimentation environment above the relic banks of the East-Siberian Arctic seas. In: V.A. Akulichev, ed., Far Eastern Seas of Russia, Book 2, Nauka Press, Moscow, 419-442.

15. *Semiletov I.P.*, N.I. Savelieva, G.E. Weller, I.I. Pipko, S.P. Pugach, A.Yu Gukov, and L.N. Vasilevskaya, 2000, The Dispersion of Siberian River Flows into Coastal Waters: Meteorological, Hydrological and Hydrochemical Aspects, In: The Freshwater Budget of the Arctic Ocean, NATO Meeting/NATO ASI Series, E.L. Lewis (ed.), Kluwer Academic Publishers, Dordrecht, 323-367.
16. *Semiletov I.P.*, 1995, Carbon Cycle and Global Change in past and present, Chapter in: Chemistry of the seas and oceans, O.K. Bordovsky (ed.), Moscow, Nauka Press, 130-154.
17. *Semiletov I.P.*, I.I. Pipko, N.Ya. Pivovarov, A. Yu. Gukov, S.A. Zimov, and S.P. Daviodov, 1994, On the flux of methane and carbon dioxide from aquatic ecosystems of the Northern Asia to the atmosphere. In: Bridges of Science Between North America and the Russian Far East, R.H. Meehan, V. Sergienko, and G. Weller (eds), Proc.45th Arctic Science Conference, Vladivostok 1994, 140-148.
18. *Semiletov, I.P.*, 1993, Ancient Ice Air Content of the Vostok Ice Core. In: Biogeochemistry of Trace Gases, S. Oremland (ed.), Chapman and Hall Inc., New York, 46-59.
19. *Semiletov, I.P.*, S.A. Zimov, S.P. Daviodov, Yu.V. Voropaev, and S.F. Prosyannikov, 1993, Arctic Atmospheric CO₂ Bimodal Distribution, In T.S. Vinson and T.P. Kolchugina (eds.), Proc. of the International Workshop on Carbon Cycling in Boreal Forest and Sub-Arctic Ecosystems: Corvallis, OSU, Oregon, September 1991, 35-41.

Published Articles (peer-reviewed)

20. *Semiletov I.P.*, 1986, On hydrogen genesis in the sea water. Hydrogen in the Atlantis-2 Deep. *Oceanology*, 26, issue 3, 427-432 (translated into English).
21. *Semiletov I.P.*, 1986, On the influence of gas exchange in the ocean-atmosphere system on formation of the atmosphere baric field, *Trans. (Doklady) Russian Acad. Sci.*, 291, 5, 1231-1234 (translated into English).
22. *Semiletov I.P.*, 1986, Sensitivity increase for the thermo-conductivity gas chromatographic detector, *Zavodskaya Laboratoriya*, 3, 17 (translated into English).
23. *Semiletov I.P.*, 1987, On seasonal variability of hydrocarbon gases and dissolved oxygen in the Uglovoe Bay, the Japan Sea, *Proc. Far-Eastern Hydrometeorological Institute*, 131, 80-84 (in Russian).
24. *Semiletov I.P.* and E.F. Radaev, 1987. Gas-chromatographic analyses of TCO₂ in the sea water. *Proc. Far-Eastern Hydrometeorological Institute*, 131, 73-79 (in Russian).
25. *Semiletov I.P.*, A.Yu. Gusev. N.I. Barkov, N.V. Pozdnyakov, and V.A. Lipenkov, 1989. Paleovariations of air CO₂ in the Antarctic ice cores. *Trans. (Doklady) Russian Acad. Sci.*, v.309, 1, 196-199.
26. Bordovsky, O.K. and *I.P. Semiletov*, 1989, Carbon exchange between the bottom water and bottom sediment of the Sea of Okhotsk, *Trans. (Doklady) Russian Acad. Sci.*, 306, 697-700 (translated into English).
27. *Semiletov, I.P.* New technique and instrument for dissolved gas sampling, Patent of the Russian Federation (Патент РФ) №1763938, 12.01.90.
28. *Semiletov I.P.* and I.I. Pipko, 1991, Meso-scale spatial-time variability of carbon dioxide in the Pacific Sub-Arctic Frontal Zone, *Oceanology*, 34 (1), 84-91 (translated into English).
29. *Semiletov, I.P.*, 1992, Determination of total inorganic carbon content in sea water by the GC-technique. In: O.K. Bordovsky and V.N. Ivanenkov (eds.), *Modern Methods of*

- Hydrochemical Researches*. P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, Moscow, 94-106 (in Russian).
30. Semiletov I.P., 1993, On paleo-variations of the atmosphere composition in the ice core ancient inclusions, *Antarctica*, Moscow, Nauka Press, 31, 64-84.
 31. Semiletov I.P., 1993, Carbon cycle and global change over the last climate period. *Data of Glaciological Studies* (Materiali Glaciologicheskikh Issledovaniy), 76, Moscow, Nauka Press, 163-183 (in Russian).
 32. Gurgul, H., I. Semiletov, and W. Stochm, 1993. Concentration of TCO₂ and its dependence on salinity in surface waters of the Atlantic Ocean. In: the *Second Polish-Soviet Antarctic Symposium*, R.Z. Klekowski and K.W. Opalinski (eds.), Institute of Ecology, Dziekanow Lesny, p.41-44.
 33. Zimov, S.A., I.P. Semiletov, S.P. Daviodov, Yu.V. Voropaev, S.F. Prosyannikov, C.S. Wong, and Y.-H. Chan, 1993, Wintertime CO₂ emission from soils of Northeastern Siberia. *Arctic*, 46, 197-204.
 34. Semiletov I.P., 1994, Atmospheric methane in past and present, *Trans. (Doklady) Russian Acad. Sci.*, 339, 2, 253-256 (translated into English).
 35. Semiletov I.P., Yu. Kharlamov, A. Myagkikh, A. Nikitin, and I. Pipko, 1994, Cosmic rays as a factor for atmospheric CO₂ sink. *Trans. (Doklady) Russian Acad. Sci.*, 334, 4, 512-514 (translated into English).
 36. Semiletov I.P., I.I. Pipko, and A.Yu. Nikitin, 1995, Carbon dioxide in the surface waters of the Southern Ocean: the Indian and Atlantic sectors, *Trans. (Doklady) Russian Acad. Sci.*, 342, 3, 393-397 (translated into English).
 37. Semiletov I.P. I.I. Pipko, N.Ya Pivovarov, V.V. Popov, S.A. Zimov, Yu.V. Voropaev, and S.P. Daviodov, 1996, Atmospheric carbon emissions from northern lakes: a factor of global significance, *Atmospheric Environment*, 30, 1657-1671.
 38. Semiletov I.P., N.Ya. Pivovarov, I.I. Pipko, A.Yu. Gukov, T.I. Volkova, J.P. Sharp, Yu.S. Shcherbakov, and K.P. Fedorov, 1996, Dynamics of dissolved CH₄ and CO₂ in the Lena River Delta and Laptev Sea. *Transactions (Doklady) of the Russian Academy of Sciences*, 350 (3), 401-404 (translated into English).
 40. 38. Zimov, S.A., S.P. Daviodov, Yu.V. Voropaev, S.F. Prosyannikov, I.P. Semiletov, M.C. Chapin, and F.S. Chapin, 1996, Siberian CO₂ efflux in winter as a CO₂ source and cause of seasonality in atmospheric CO₂, *Climatic Change*, 33, 111-120.
 41. Zimov, S.A., Yu V. Voropaev, I.P. Semiletov, S.P. Daviodov, F.S. Chapin, and S. Trumbore, 1997, North Siberian Lakes: a methane source fueled by Pleistocene carbon. *Science*, 277, 800-802.
 43. Semiletov, I.P., 1998, On the increase in the atmospheric methane and hydrogen peroxide over the Arctic, In: V.F. Kozlov (ed), *Climatic and Interannual variability in the atmosphere-land-sea system in the American-Asian Sector of Arctic*, Proc. Arctic Regional Center, Vladivostok, Dalnauka Press, 1, 195-211 (in English).
 44. Semiletov, I.P., 1999, On aquatic sources and sinks of CO₂ and CH₄ in the Polar Regions, *J. Atmos. Sci.*, 56, 286-306.
 45. Semiletov, I.P., 1999, Destruction of the coastal permafrost ground as an important factor in biogeochemistry of the Arctic Shelf waters, *Trans. (Doklady) Russian Acad. Sci.*, 368, 679-682 (translated into English).
 46. Savelieva, N.I., I.P. Semiletov, L.N. Vasilevskaya., and S.P. Pugach, 2000, A climate shift in seasonal values of meteorological and hydrological parameters for Northeastern Asia, *Progress in Oceanography*, 47 (2-4), 279-297.
 47. Naidu, A.S., L.W. Cooper, B.P. Finney, R.W. Macdonald, C. Alexander, and I.P. Semiletov, 2000, Organic carbon isotope ratios($\delta^{13}\text{C}$) of Arctic Amerasian continental shelf sediments, *Int. J. Earth Sci.* (Special issue: Arctic Paleo-River Discharge), 89, 522-532.
 48. Luchin, V.A., I.P. Semiletov, and G.E. Weller, 2002, Changes in the Bering Sea region: atmosphere-ice-water system in the second half of the twentieth century, *Progress in*

Oceanography, 55 (1-2), 23-44.

49. Pipko, I.I., *I.P. Semiletov*, P.Ya. Tishchenko, S.P. Pugach, and J.P. Christensen, 2002. Carbonate chemistry dynamics in Bering Strait and the Chukchi Sea, *Progress in Oceanography*, 55, 77–94.
50. *Semiletov, I.P.*, O.V. Dudarev, N.I. Savelieva, I.I. Pipko, and S.P. Pugach, 2003, POI studies in the Arctic Amerasian shelf, *Herald of the Far Eastern Branch, Russian Academy of Sciences*, 108, 2, 73-80 (in Russian).
51. Dudarev, O., *I. Semiletov*, A. Botsul, and A. Charkin, 2003, Modern sedimentation in the coastal cryolitozone of the Dmitry Laptev Strait/East-Siberian Sea, *Pacific Geology*, 22, 1, 51-60 (translated into English).
52. *Semiletov, I.*, A. Makshtas, S.-I. Akasofu, and E.L. Andreas, 2004, Atmospheric CO₂ balance: the role of Arctic sea ice, *Geophysical Research Letters*, 31, L05121, doi: 10.1029/2003GL017996.
53. *Semiletov, I.*, N. Shakhova, and V. Romanovsky, 2004, Methane Climate Forcing and Methane Observations in the Siberian Arctic Land-Shelf System, *World Resource Review*, 16 (4), 503-541
54. Guo, L., *I. Semiletov*, O. Gustafsson, J. Ingri, P. Anderson, O. Dudarev, and D. White, 2004, Characterization of Siberian Arctic coastal sediments: Implications for terrestrial carbon export. *Global Biogeochemical Cycles*, 18, GB 1036, doi: 10 1029/2003 GBO 02087
55. Savelieva, N.I., *I.P. Semiletov*, G.E. Weller, L.N. Vasilevskaya, and V.I. Yusupov, 2004, Climate change in northern Asia in the second half of the 20th century, *Pacific Oceanography*, 2 (1-2), 74-84.
56. Luchin, V.A., *I. Semiletov* (2005), Interannual Variability of Water Temperature in the Chukchi Sea, *Doklady Earth Sciences*, 405A(9), 1419-1422, Translated from Doklady Akademii Nauk, Vol. 405, No. 6, pp. 815-818.
57. *Semiletov, I.*, O. Dudarev, V. Luchin, K.-H. Shin, and N. Tanaka, 2005, The East-Siberian Sea as a transition zone between Pacific-derived waters and Arctic shelf waters, *Geophysical Research Letters*, 32, L10614/2005GL022490.
58. Iossoupov, V.I., A.S. Salomatin, and *I.P. Semiletov*, 2005, Relationship between backscattering of high-frequency acoustical signal and temperature in the upper sediment layer over the Arctic shelf. *Transactions of Russian Academy of Sciences*, 402 (5), 686-688 (translated into English).
59. Gukov A.Yu., Dudarev O.V., *Semiletov I.P.* and A.N. Charkin, 2005. Peculiarities of the benthic biomass distribution in the southern part of the East-Siberian Sea. *Oceanologia (Oceanology)*, vol. 45, N 6, 889-896 (translated in English)
60. Belzil, C., C. S. Roesler, J. P. Christensen, N. Shakhova, and *I. Semiletov*, 2006, Fluorescence measured using the WETStar DOM fluorometer as a proxy for dissolved matter absorption. *Estuarine Coastal and Shelf Science*, 67, 41-449.
61. Dudarev, O.V., *I.P. Semiletov*, A.N. Charkin, and A.I. Botsul, 2006, Deposition settings on the continental shelf of the East Siberian Sea, *Transactions of Russian Academy of Sciences*, 409 (6), 822-827 (translated into English).
62. Dudarev, O.V., *I.P. Semiletov*, and A.N. Charkin, 2006, Imhomogeneities of the particulate material content in the Lena River-Laptev sea system, *Transactions of Russian Academy of Sciences*, 410 (4) (translated into English)..
63. Pipko, I.I., *I.P. Semiletov*, and S.P. Pugach, 2006, On the carbon dioxide exchange in the atmosphere-ocean system in the Chukchi Sea, *Transactions of Russian Academy of Sciences*, 410 (5), 679-683 (translated into English)..
64. Repina, I.A., *I. Semiletov*, A.S. Smirnov, 2007, Direct measurement of CO₂ fluxes in the Laptev Sea in summer, *Transactions of Russian Academy of Sciences*, 413 (5), (translated in English by Springer).

65. Semiletov, I., I.I. Pipko, I.A. Repina, and N. Shakhova, 2007, Carbonate dynamics and carbon dioxide fluxes across the atmosphere-ice-water interfaces in the Arctic Ocean Pacific sector of the Arctic, *Journal of Marine Systems*, 66 (1-4), 204-226.
66. Shakhova, N. and I. Semiletov, 2007, Methane release and coastal environment in the East Siberian Arctic shelf, *Journal of Marine Systems*, 66 (1-4), 227-243.
67. Semiletov, I.P. and I.I. Pipko, 2007, Sinks and sources of carbon dioxide in the Arctic Ocean, *Transactions of Russian Academy of Sciences*, 414 (3), (translated in English by Springer).
68. Shakhova, N., I. Semiletov, A. Salyuk, N. Belcheva, and D. Kosmach, 2007, Anomalies of methane in air above the sea surface in the East-Siberian Arctic shelf, *Transactions of Russian Academy of Sciences*, 414 (6), (translated in English by Springer).
69. Shakhova, N., I. Semiletov, and N. Belcheva, 2007, The Great Siberian Rivers as a source of methane on the Russian Arctic shelf, *Transactions of Russian Academy of Sciences*, 414 (5), (translated in English by Springer).
70. Shakhova, N., I. Semiletov, and G. Panteleev, 2005, The distribution of methane on the Siberian Arctic shelves: Implications for the marine methane cycle, *Geophysical Research Letters*, 32, L09601, doi:1029/2005GL022751
71. Shakhova, N.E., I.P. Semiletov, and N. Bel'cheva, 2005, Methane in the Eastern Arctic seas. *Transactions of Russian Academy of Sciences*, 402 (4), 529-533 (translated into English).
72. Shakhova, N., I. Semiletov, A. Salyuk, N. Belcheva, D. Kosmach, and V.I. Sergienko, 2008. On the role of the East-Siberian Shelf in the modern methane cycle and global change, *Harold of the East-Siberian Branch of Russian Academy of Sciences*, No. 4.
73. Van Dongen B.E., I.P. Semiletov, J.W.H. Weijers, and Ö. Gustafsson. 2008, Contrasting lipid biomarker composition of terrestrial organic matter exported from across the Eurasian Arctic by the five Great Russian Arctic Rivers, *Global Biogeochemical Cycles*, VOL. 22, GB1011, doi:10.1029/2007GB002974, 2008 .
74. Elmquist M., I. Semiletov, L. Guo and Ö. Gustafsson. 2008, Pan-Arctic patterns in black carbon sources and fluvial discharges deduced from radiocarbon and PAH source apportionment markers in estuarine surface sediments, *Global Biogeochemical Cycles*, VOL. 22, GB2018, doi:10.1029/2007GB002994, 2008
75. Pipko, I.I., Semiletov I.P., Tischenko P.Ya., Pugach S.P., and N.I. Savelieva, 2008. Carbon System Parameters Variability in the East-Siberian Sea Coastal-Shelf Zone during Fall Season. *Okeanologiya (Oceanology)*, 48 (1), 59-72 (translated in English)
76. Vetrov, A.A., I.P. Semiletov, O.V. Dudarev, V.I. Peresipkin, and A.N. Charkin, 2008. Study of composition and origin of organic matter in the East-Siberian Sea bottom sediments, *Geokhimiya (Geochemistry)*, 3, 183-195 (translated in English).
77. Pipko, I.I., Repina I.A., Salyuk A.N., Semiletov I.P., and S.P. Pugach, 2008. Comparison of Calculated and Measured CO₂ Fluxes between the Ocean and Atmosphere in the Southwestern Part of the East Siberia Sea. *Transactions of Russian Academy of Sciences*, 422 (7), 1105-1108 (translated in English by Springer).
78. Christensen J.P., Shimada K., Semiletov I.P. and P. A. Wheeler, 2008. Chlorophyll Response to Shelf-Break Upwelling and Winds in the Chukchi Sea, Alaska, in Autumn. *The Open Oceanography Journal*, 2, 34-53
79. Macdonald R.W., Anderson L.G., Christensen J.P., Miller L.A., Semiletov I.P., and R. Stein, 2008. The Arctic Ocean: budgets and fluxes, In "Carbon and Nutrient Fluxes in Continental Margins: A Global Synthesis," Edited by K.-K. Liu, L. Atkinson, R. Quinones, L. Talaue-McManus, Springer-Verlag, 291-303.
80. Pipko, I. I., I. A. Repina, A. N. Salyuk, I. P. Semiletov, and S. P. Pugach (2008), Comparison of Calculated and Measured CO₂ Fluxes between the Ocean and Atmosphere in the Southwestern Part of the East Siberia Sea, *Transactions (Doklady) Earth Sciences*, 422, N7, 1105–1109 (translated in English by Springer)..
81. Pipko, I.I., Semiletov I.P., Tischenko P.Ya., Pugach S.P., and N.I. Savelieva, 2008. Carbon

- System Parameters Variability in the East-Siberian Sea Coastal-Shelf Zone during Fall Season. *Okeanologiya (Oceanology)*, 48 (1), 59-72 (translated in English)
82. Shakhova, N., I. Semiletov, A. Salyuk, N. Belcheva, D. Kosmach, and V.I. Sergienko, 2008. On the role of the East-Siberian Shelf in the modern methane cycle and global change, *Herald of the East-Siberian Branch of Russian Academy of Sciences*, No. 4.
 83. Semiletov I. and O. Gustafsson, 2009. East Siberian Shelf Study Alleviates Scarcity of Observations, *EOS*, vol. 90 (17), p. 145-152.
 84. Shakhova N.E., Sergienko V.I., and I.P. Semiletov, 2009. Modern state of the role of the East Siberian Shelf in the methane cycle. *Herald of the Russian Academy of Sciences*, Vol. 79, No. 6, pp. 507–518.
 85. Cooke M.P., van Dongen B., Talbot H., Semiletov I.P., Shakhova N., Guo L., and O. Gustafsson, 2009. Bacteriohopanepolyol biomarker composition of organic matter exported to the Arctic Ocean by seven of the major Arctic rivers. *Organic Geochemistry*, doi: 10.1016/j.orggeochem.2009.07.14
 86. Shakhova N.E., Alexeev V.A., and I. P. Semiletov, 2009. Accessing future increase in methane emission over the East-Siberian Shelf, *Transactions of Russian Academy of Sciences*, Vol. 429 (4), (translated in English by Springer)
 87. Porcelli D., Andersson P., Baskaran M., Frank M., Björk G., and I. Semiletov, 2009. The distribution of neodymium isotopes in Arctic Ocean basins. *Geochimica et Cosmochimica Acta*, 73, 2645-2659
 88. Shakhova N.E., Nicolsky D., and I. P. Semiletov, 2009. On the current state of sub-sea permafrost in the East-Siberian Shelf testing of modeling results by observational data. *Transactions of Russian Academy of Sciences*, Vol. 429 (5), translated in English by Springer)
 89. Shakhova N.E., Joussupov V., Salyuk A., Kosmach D., and I. P. Semiletov, 2009. Anthropogenic factor and methane emission over the East Siberian Shelf. *Transactions of Russian Academy of Sciences*, Vol. 429 (6), (translated in English by Springer)
 90. Anderson L.G., Jutterström S., S. Hjalmarsson S., I. Wahlström I., and I. P. Semiletov, 2009. Out-gassing of CO₂ from Siberian Shelf seas by terrestrial organic matter decomposition. *Geophysical Research Letters*, 36, L20601, doi:10.1029/2009GL040046, 2009
 91. Semiletov I.P., and O. Gustafsson, 2009. East Siberian Shelf Study Alleviates Scarcity of Observations. *Eos, Transactions, AGU*, vol. 90, number 17, 28 April 2009, p. 145-146
 92. Shakhova N., Semiletov I., Salyuk A., Joussupov V., Kosmach D., and O. Gustafsson (2010). Extensive methane venting to the atmosphere from sediments of the East Siberian Arctic Shelf, *Science* 327, 1246-1250
 93. Shakhova N., Semiletov I., Leifer I., Rekant P., Salyuk A., and D. Kosmach (2010). Geochemical and geophysical evidence of methane release from the inner East Siberian Shelf, *Journal Geophys. Res*, 115, doi:10.1029/2009JC005602
 94. Shakhova N., Semiletov I., and O. Gustafsson (2010). Methane from the East Siberian Arctic Shelf/Response, *Science*, 329, 1147-1148.
 95. Alling V, Sanchez-Garcia L, Porcelli D, Pugach S, Vonk J, van Dongen B, Mörth C M, Anderson L G, Sokolov A, Andersson P, Humborg C, Semiletov I., and Gustafsson Ö (2010) Non-conservative behavior of dissolved organic carbon across the Laptev and East Siberian seas, *Global Biogeochemical Cycles*, 24, GB4033
 96. Vonk J.E., Sánchez-García L., Semiletov I., Dudarev O., Eglinton T., Andersson A., and Ö. Gustafsson (2010). Molecular and radiocarbon constraints on sources and degradation of terrestrial organic carbon along the Kolyma paleoriver transect, East Siberian Sea, *Biogeosciences*, 7, 3153–3166, 2010.
 97. Yusupov V. I.; Salyuk A. N.; Karnaukh V. N., Semiletov I.P., Shakhova N.E. (2010). Detection of methane ebullition in shelf waters of the Laptev Sea in the Eastern Arctic

- Region, *Doklady Earth Sciences*, 430, 2, 261-264, doi: 10.1134/S1028334X1002025X, 2010, (translated in English by Springer) .
98. Anderson, L.G., Björk, G., Jutterström, S., Pipko, I., Shakhova, N. *Semiletov, I.* and Wählström, I. (2011). East Siberian Sea, an Arctic region of very high biogeochemical activity, *Biogeosciences*, 8, 1745-1754, 2011, doi:10.5194/bg-8-1745-2011.
 99. Charkin A.N., Dudarev O.V., *Semiletov I.P.*, Kruhmalev A.V., Vonk J.E., Sánchez-García L., Karlsson E., and Ö. Gustafsson (2011). Seasonal and interannual variability of sedimentation and organic matter distribution in the Buor Khaya Gulf – the primary recipient of input from Lena River and coastal erosion in the SE Laptev Sea, *Biogeosciences*, 8, 2581–941.
 100. Gustafsson Ö., van Dongen B.E., Vonk J.E., Dudarev O. ., and *I.P. Semiletov* (2011). Widespread release of old carbon across the Siberian Arctic echoed by its large rivers, *Biogeosciences*, 8, 1737-1743, doi: 10.5194/bg-8-1737-2011.
 101. Karlsson, E. S., Charkin, A., Dudarev, O., *Semiletov I.*, Vonk1, J. E., Sánchez-García, L., Andersson, A., and Gustafsson Ö. (2011). Carbon isotopes and lipid biomarker investigation of sources, transport and degradation of terrestrial organic matter in the Buor-Khaya Bay, SE Laptev Sea, *Biogeosciences*, 8, 1865–1879, doi:10.5194/bg-8-1865-2011.
 102. Pipko I. I., *Semiletov I. P.*, Pugach S. P., I. Wählström, and Anderson L. G. (2011). Interannual variability of air-sea CO₂ fluxes and carbon system in the East Siberian Sea, *Biogeosciences*, 8, 1987-2007, 2011, doi:10.5194/bg-8-1987-2011.
 103. Pipko, I. I., Pugach, S. P., Semiletov, I. P. and Salyuk, A. N. (2011). Carbonate characteristics of waters of the Arctic Ocean continental slope, *Doklady Earth Sciences*, 2011, 438, Part 2, pp. 858–863 (translated in English by Springer).
 104. Sánchez-García L., Alling V., Pugach S., Vonk J., van Dongen B., Humborg C., Dudarev O., *Semiletov I.*, and Ö. Gustafsson (2011). Distribution, sources and inventories of particulate organic carbon in the Laptev and East Siberian Seas, *Global Biogeochemical Cycles*, 25, GB2007, doi:10.1029/2010GB003862.
 105. *Semiletov I.P.*, Pipko I.I., Shakhova N.E., Dudarev O.V., Pugach S.P., Charkin A.N., McRoy C.P., Kosmach D., and Ö. Gustafsson (2011). Carbon transport by the Lena River from its headwaters to the Arctic Ocean, with emphasis on fluvial input of terrestrial particulate organic carbon vs. carbon transport by coastal erosion, *Biogeosciences*, 8, 2407-2426.
 106. *Semiletov I.P.*, Shakhova N. E., Sergienko V.I., Pipko I.I., and O. Dudarev (2012). On Carbon Transport and Fate in the East Siberian Arctic Land-Shelf-Atmosphere System, *Environment Research Letters*, 7, doi:10.1088/1748-9326/7/1/015201
 107. Proshutinsky, A., M.-L. Timmermans, I. Ashik, A. Beszczynska-Moeller, E. Carmack, I. Frolov, R. Ingvaldsen, M. Itoh, T. Kikuchi, R. Krishfield, F. McLaughlin, H. Loeng, S. Nishino, R. Puickart, B. Rabe, B. Rudels, *I. Semiletov*, U. Schauer, N. Shakhova, K. Shimada, V. Sokolov, M. Steele, J. Toole, T. Weingarther, W. Williams, R. Woodgate, M. Yamamoto-Kawai, and S. Zimmermann, 2012. [The Arctic] Ocean [in “State of the Climate in 2011”], *Bulletin of the American Meteorological Society*, 93 (7), S142-S145
 108. Vonk, J., L. Sánchez-García, B. van Dongen, V. Alling, D. Kosmach, A. Charkin, *I. Semiletov*, O. V. Dudarev, N. E. Shakhova, P. Roos, T. I. Eglinton, A. Andersson and Ö. Gustafsson, 2012. Activation of old carbon by erosion of coastal and subsea permafrost in Arctic Siberia. *Nature*, doi:10.1038/nature11392
 109. Nicolosky, D.J., V. E. Romanovsky, N. Romanovskii, A. L. Kholodov, N. E. Shakhova and *I. Semiletov*, 2012. Modeling sub-sea permafrost in the East Siberian Arctic Shelf: The Laptev Sea Region. *Journal of Geophysical Research*, doi:10.1029/2012JF002358
 110. *Semiletov, I.P.*, Shakhova, N.E., Pipko, I.I., Pugach, S.P., Charkin, A.N., Dudarev, O.V., Kosmach, D.A., and S. Nishino (2013). Space-time dynamics of carbon and environmental parameters related to carbon dioxide emissions in the Buor-Khaya Bay of the Laptev Sea, *Biogeosciences*, 10, 5977-5996, www.biogeosciences.net/10/5997/2013/doi:10.5194/bg-10-

111. Feng X., Vonk J., vanDongen B., Gustafsson O., Semiletov I.P., Dudarev O.V., Wang Z., Montucluq D.B., Wacker L., and T.I. Eglinton, 2013. Differential mobilization of terrestrial carbon pools in Eurasian Arctic river basins, *PNAS*, www.pnas.org/cgi/doi/10.1073/pnas.1307031110.
112. Nishino, S., M. Itoh, W. J. Williams, and I. P. Semiletov, 2013. Shoaling of the nutricline with an increase in near-freezing temperature water in the Makarov Basin, *J. Geophys. Res.*, doi:10.1029/2012JC008234.
113. Timmermans, M-L., Proshutinsky, A., Ashik, I., Beszczynska-Moeller, A., Carmack, E., Frolov I., Ingvaldsen, Itoh M., Jackson, J., Kawaguchi, J., Kikuchi, T., Krishfield, R., McLaughlin, F., Loeng, H., Nishino, S., Pickart, R., Rabe, B., Rudels, B., Semiletov, I., Schauer, U., Shakhova, N., Shimada, K., Sokolov, V., Steele, M., Toole, J., Weingartner, T., Williams, W., Woodgate, R., Yamamoto-Kawai, M., and S. Zimmermann (2013). [The Ocean [in “State of the Climate in 2012”], *Bulletin of the American Meteorological Society*, in press
114. Shakhova, N., Semiletov I., Leifer, I., Sergienko, V., Salyuk, A., Kosmach, D., Chernikh D., Stubbs Ch., Nicolsky D., Tumskoy V., and O. Gustafsson, 2013. Ebullition and storm-induced methane release from the East Siberian Arctic Shelf, *Nature Geosciences*, accepted.
115. Persson P.-O., Andersson P.S., Alling V., Morth C.-M., Bjork G., Semiletov I., and D. Porcelli, 2013. Ice export from the Laptev and East Siberian Sea derived from $d^{18}O$, *Journal of Geophysical Research*, accepted.

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