

Dr. Alexey Portnov, Research Scientist

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 YouTube: <https://www.youtube.com/c/VisualizationLabAlexeyPortnov>

Education

- 2012-2015 **PhD degree.** CAGE - Centre for Arctic Gas Hydrate, Environment and Climate, UiT, The Arctic University of Norway, Tromsø, Norway. PhD thesis: “Role of subsea permafrost and gas hydrate in postglacial Arctic methane releases”. Study areas – South Kara Sea, Barents Sea, West Svalbard margin.
- 2007-2009 **Master’s degree.** “Geology and geophysics of sea and ocean”. Saint-Petersburg State University, Geological faculty, Saint Petersburg, Russia.
 Master’s degree thesis, “Identification of gas-saturated sediments in the upper section of the South Kara Sea sediment cover using high-resolution seismic and sediment sampling data”.

Employment History

- 2023-present Research scientist at Andalusian Earth Sciences Institute, The Spanish National Research Council
- 2020-2023 Research Associate at the University of Texas at Austin, Jackson School of Geosciences, Austin, USA
- 2017-2020 Postdoctoral scholar at the Ohio State University, School of Earth Sciences, Columbus, USA
- 2016-2017 Postdoctoral scholar at CAGE - Centre for Arctic Gas Hydrate, Environment and Climate, UiT-The Arctic University of Norway, Tromsø, Norway
- 2006-2012 Geophysicist at FSUE “I.S. Gramberg VNIIOkeangeologia”, Saint-Petersburg, Russia
- 2007-2009 Researcher at the Otto Schmidt Laboratory. Saint-Petersburg, Russia

Field Experience

- 2024 March Mediterranean Sea on RV Sarmiento de Gamboa. Geophysical, ROV and AUV survey
- 2017 May Deep-water Gulf of Mexico on Drilling Vessel Helix Q4000. University of Texas GOM2-1 deep-sea drilling project. Pressure coring in a gas hydrate reservoir.
- 2016 October Central Barents Sea, West Svalbard Margin on RV Helmer Hanssen. Scientific cruise of University of Tromsø and CAGE. Installation of long-term marine bottom observatories in areas of active seafloor gas release. Collection of sediment cores.
- 2016 June-July Fram Strait, West Svalbard Margin, Barents Sea on RV Helmer Hanssen. Scientific cruise of University of Tromsø and CAGE. 3D and 2D seismic survey, multibeam, OBS studies.
- 2016 June Barents Sea, West Svalbard margin on RV Helmer Hanssen. Scientific cruise of University of Tromsø and CAGE. ROV survey, hydroacoustic, biological, geochemical studies.
- 2014 October Norwegian Sea, West Svalbard Margin on RV Helmer Hanssen. Scientific cruise of University of Tromsø and CAGE. Hydro-acoustic, 2D seismic and geological investigations in the areas of active gas plumes. Collection of sediment cores.
- 2014 June Norwegian Sea, West Svalbard Margin on RV Helmer Hanssen. Scientific cruise of University of Tromsø and CAGE. Hydro-acoustic, 2D seismic and geological investigations in the areas of intensive gas plumes. Collection of sediment cores.

2013 August	Kara Sea on RV Aldan. Supervisor in Rosneft and ExxonMobil joint acoustic survey at the potential oil and gas fields.
2012 August	Kara Sea, West Yamal Shelf on RV Spasatel. Scientific cruise of VNIIOkeangeologia. Complex gas-geochemical and high-resolution seismic survey. Collection of sediment cores.
2012 June	Norwegian and Barents Sea on RV Helmer Hanssen. Scientific cruise of University of Tromsø. seismic survey 3D, sediment core acquisition over seafloor gas vents.
2011 September	Kara Sea on RV Akademik Mstislav Keldysh. Scientific cruise of P.P. Shirshov Institute of Oceanology, Moscow
2009-2011	Four expeditions in the South-China Sea on RV Iskatel-5 and RV Emma. Gas-geochemical and seismic survey, under the contract with JSC “Vietgazprom”.
2007 August	Laptev Sea on RV Ivan Petrov. Russian-German offshore permafrost drilling cruise.
2006 September	Barents Sea on RV Gidrolog. VNIIOkeangeologia geophysical and gas-geochemical survey, under the contract with JSC “Severneftegas”.

Projects with industry and academia

2023	Woodside Energy “Magellan Hydrate Sponsored Research Project”
2017-2023	GOM ² : Methane Hydrates at the University of Texas. Project focusing on methane hydrates as a future energy resource. The effort is supported by the U.S. Department of Energy and links UTIG, the Department of Geological Sciences at the Jackson School of Geosciences, and the UT Department of Petroleum and Geosystems Engineering with Columbia University, Ohio State, the University of New Hampshire, the University of Oregon, the University of Washington, the USGS, and the BOEM.
2019-2020	“Gulf of Mexico Hydrate Mapping and Interpretation Analysis” project of the US Bureau of Ocean Energy Management and the Ohio State University. Exploration for new gas hydrate reservoirs. https://www.boem.gov/oil-gas-energy/resource-evaluation/ohio-state-university-methane-hydrate-prospect-analysis-gulf
2014	“Arctic-2014”. Analyses and interpretation of high-resolution seismic data in the areas of gas seepage in the northern Kara Sea, Laptev Sea and Chukchi Sea. Under the contract with PJSC Rosneft.
2013	“Marine geochemical survey within the license block VP-1”. Acquisition of multibeam, side-scan sonar and chirp data. Collection of sediment cores. Supervisor from Rosneft-Shelf Far East.
2012	“Regional geological and geophysical studies at the South Kara Sea, off-Yamal peninsula”. Contract with the Federal Subsoil Resources Management Agency of Russia.
2011	“Complex interpretation of regional geophysical and geochemical studies within blocks 129-132 of Vietnam continental shelf” under the contract with JSC “Sevmorneftegeophysica”. Collection of sediment cores. 2D seismic data interpretation integrated with regional geochemical survey.
2010	“Offshore geochemical survey in blocks 129, 130, 131, 132 on Vietnam’s continental shelf”. Performance of laboratory analysis and interpretation under the contract with JSC “Vietgazprom”.
2010	“Provision of detailed geochemical survey on the licensed drilling sites Kolskiy-1, Kolskiy-2, Kolskiy-3” within Kolsko-Kaninskaya monocline on the Barents Sea shelf”. Under the contract with JSC “Severneftegas”.
2008-2009	“SEDORA” project under the contact with “Shell”. High-resolution seismic data interpretation within Russian Arctic shelf. Development of the database of gas-related acoustic anomalies in the Barents Sea, Kara Sea, and Laptev Seas.
2007-2008	“Prospecting for hydrocarbon potential of Angola continental shelf within blocks 12, 13, 29, 30 based on the 2D seismic data” under the contract with “Sevmorgeologia”. 2D seismic data interpretation.
2006	“Marine geological engineering studies within licensed polygons JSC “Severneftegas”, Kolsko-Kaninskaya monocline on the Barents Sea continental shelf” under the contract with JSC “Severneftegas”. High-resolution seismic data interpretation.
2005-2006	“Hydro-geochemical survey within the licensed blocks of JSC “Severneftegas”, Kolsko-Kaninskaya monocline at the Barents Sea continental shelf” under the contract with JSC “Severneftegas”.

Grants and funding

2023	Woodside Energy award “Magellan Hydrate Sponsored Research Project” through the University of Texas at Austin, USA (\$60,758) Alexey Portnov (PI), Kehua You (co-PI).
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- 2023 EMERGIA award (Programa de captación de talento EMERGIA), Junta de Andalucía, Spain. “Dating submarine slides using transient gas hydrate stability: a novel approach to understanding timing and origin of slope failures” (\$252,400). Alexey Portnov (PI)
- 2022 Bureau of Ocean Energy Management Award “Gulf of Mexico Hydrate Mapping and Interpretation Analysis Phase 2” (\$149 915). A. Cook (PI), Alexey Portnov (PI) Award #140M0122P0017
- 2021 (*Stalled due to travel restrictions till 2022*). Funded NSF proposal “Analysis of Offshore Geophysical Data from a Formerly Glaciated Russian Arctic Shelf” (\$39 554). Alexey Portnov (PI). Proposal Number: 2129882.
- 2019 Bureau of Ocean Energy Management Award “Gulf of Mexico Hydrate Mapping and Interpretation Analysis” (\$109 700). A. Cook (PI), Alexey Portnov (Project Lead). Award #140M0119P0041
<https://www.boem.gov/oil-gas-energy/resource-evaluation/ohio-state-university-methane-hydrate-prospect-analysis-gulf>
- 2016-2018 postdoc scholarship at UiT- The Arctic University of Norway 1.48 mln NOK (~177 000\$). Project proposal for postdoctoral fellowship entitled “Coupled response of gas hydrate and permafrost systems in Arctic petroleum provinces to post-glacial ice sheet retreat”

Cooperation with international research groups

- Ohio State University (USA)
- University of Texas at Austin (USA)
- Bureau of Ocean Energy Management (USA)
- US Geological Survey (USA)
- Chevron (USA)
- CAGE - Center for Arctic Gas Hydrate Environment and Climate, The Arctic University of Norway (Norway)
- CEED - Centre for Earth Evolution and Dynamics, Oslo University (Norway)
- VBPR-Volcanic Basin Petroleum Research (Norway)
- CGF - Center for Geophysical Forecasting, Norwegian University of Science and Technology (Norway)
- NIWA - National Institute of Water & Atmospheric Research Ltd (New Zealand)
- GNS Science (New Zealand)
- Marine Research Center, Moscow State University (Russia)
- Earth Cryosphere Institute of Tyumen Scientific Centre SB RAS (Russia)
- VNIIOkeangeologia - I.S. Gramberg All-Russia Scientific Research Institute of Geology and Mineral Resources of the World Ocean (Russia)
- VSEGEI - A.P. Karpinsky Russian Geological Research (Russia)
- GEOMAR - Helmholtz Centre for Ocean Research Kiel (Germany)
- OGS-National Institute of Oceanography and Experimental Geophysics (Italy)
- The UCD School of Earth Sciences (Ireland)
- CSIR-National Institute of Oceanography Goa (India)
- MGMC - Marine Natural Resources - Environment Survey Center (Vietnam)

Invited and keynote talks

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| 2024 July | Geological Congress of Spain, keynote talk, Ávila, Spain |
| 2023 November | Institute of Marine Sciences (ICM), Barcelona, Spain |
| 2021 November | Society for Sedimentary Geology (SEPM) meeting, USA |
| 2021 November | Ocean Data Platform guest talk, Norway |
| 2020 December | AGU Fall Meeting, USA |
| 2020 February | University of Texas at Austin, Institute for Geophysics, USA |
| 2020 January | University of Houston, Earth and Atmospheric Science Department, USA |
| 2019 October | Russian Academy of Science and Moscow State University, Russia |
| 2019 May | Chevron Oil Company, Houston, USA |
| 2018 May | Stockholm University, Department of Geological Sciences, Sweden |
| 2018 June | Minerals of The Ocean – 9 research conference, Saint-Petersburg, Russia |
| 2017 December | Ohio State University, School of Earth Sciences, USA |

Academic Service

- Graph For All Million Dollar Challenge Judge and Expert of the Climate Cluster (Spring, 2022)
- Member of the Global Cryosphere Watch - Best Practices for Permafrost advisory board
- Editor for: MDPI Geosciences Special Issue: “*Gas Hydrate Exploration and Interpretation Analysis*”, 2021
https://www.mdpi.com/journal/geosciences/special_issues/Gas_Hydrate_Exploration
- Reviewer for: *Nature Communications, Nature Geoscience, Geology, Journal of Geophysical Research, G-cubed, Marine and Petroleum Geology, Earth and Planetary Science Letters, Marine Geology, AAPG, Geosciences, Frontiers, Global Change Biology, Journal of Environment and Earth Science, Marine Geophysical Research, Applied Sciences, Interpretation, IODP and NSF proposals.*
- September 2021, chair at SEG|AAPG joint meeting in Denver, USA. Session: “*Gas Hydrates – hydrocarbons of the future*”.
- December 2018, AGU Fall Meeting Session co-convenor and co-chair. “*Geological and Geophysical Characterization of Marine Gas Hydrate Reservoirs*”.
- September 2018, co-organizer of GOM² Gas Hydrate Drilling Workshop at the Ohio State University, USA
- March 2018, discussion Leader at Gordon Research Conference on Natural Gas Hydrate Systems. Galveston, USA
- September 2016, co-organizer of Gas in Marine Sediments conference, Tromsø, Norway.
- June 2012, co-organizer of Minerals of The Ocean - 6 conference, Saint-Petersburg, Russia.

Training courses and seminars

2024 September	Advanced Course on Deepwater Sedimentary Systems, IACT-CSIC, Spain
2021 April	Geoscientific data analyses using UNIX and GMT, University of Texas at Austin
2016 October	Geological course in Sicily, CAGE, The Arctic University of Norway
2015 May	Scientific presentation workshop (conducted by Melissa Marshall, Pennsylvania State University)
2014 April	ArcGIS training course, Arctic University of Norway, Tromsø, Norway
2014 March	QPS Fledermaus training course, Portsmouth, New Hampshire, USA
2010 March	HPR & HiPAP Acoustic Positioning courses, Kongsberg Maritime - Subsea Training Centre, Norway
2009 May	Saint-Petersburg State University, “Shell” company seminar, Saint-Petersburg, Russia
2008 April	Saint-Petersburg State University, “Schlumberger” company seminar, Saint-Petersburg, Russia

Teaching

2018-2020	Earth Sciences 5687 (Borehole Geophysics) and Earth Sciences 5780 (Reflection Seismology) classes at Ohio State University. Guest lecturer
2020	“Dynamic geological systems, seismic exploration and geophysical data interpretation” short course at Moscow State University
2009-2010	Teaching assistant for offshore seismic interpretation class at Saint-Petersburg State University

Supervision

- 5) Tolulope Agbaje, PhD. Expected 2027, University of Texas, co-supervisor.
- 4) Abby Varona, M.S. 2022. University of Texas, co-supervisor.
- 3) Stuart Skopce, M.S. 2021. Ohio State University, co-supervisor.
- 2) Gabriel Martinez, M.S. 2021. Ohio State University, co-supervisor.
- 1) Ryan Heber, M.S. 2020. Ohio State University, co-supervisor.

Dissertation Committee

- 1) Olin Rico Carty, M.S. 2021. University of Texas at Austin.

Computer skills

- Experienced user Windows/Linux. Python programming.

- Geo-Software: Petrel, The Kingdom Suite, Fledermaus, Global Mapper, Paradigm Geolog, ArcGIS, Surfer, Corel Draw, GMT, Microsoft Office and other.

Outreach

- Geo-visualization channel on YouTube “Visualization Lab”, showing various techniques helping to communicate marine geophysical research, first presented at AGU conference, New Orleans, USA. “Make it fun for everyone: visualization techniques in geoscience”:
<https://www.youtube.com/c/VisualizationLabAlexeyPortnov>
- Invited speaker at Deloitte company YouTube podcast (December 2020).
<https://www.youtube.com/watch?v=yf6ovLAqyxA&list=PLvViFZNmVYh8LHVtCFzi6sm0M6MWO0eJg&index=1>
- Interviewed by several media-resources in English and Russian, e.g.
<https://www.smithsonianmag.com/science-nature/tiny-world-glacier-microbes-has-outsized-impact-global-climate-180959817/>
<http://barentsobserver.com/en/arctic/2015/01/alarm-over-kara-sea-permafrost-thawing-09-01>
http://www.gazeta.ru/science/2014/12/23_a_6355645.shtml

Awards

- 2019 Certificate of Appreciation from Program Committee of “Marine Research and Education-2019” for being an invited lecturer at Moscow State University.
- 2010 Diploma of “I.S. Gramberg VNIIOkeangeologia” for long-term conscientious working activity and scientific contribution in the research of ore stock of Russian shelf and the World Ocean by the results of 2010 year.
- 2009 Diploma of “I.S. Gramberg VNIIOkeangeologia” for long-term conscientious working activity and scientific contribution in the research of ore stock of Russian shelf and the World Ocean by the results of 2009 year.

Additional information

- Native Russian language, fluent English language, basics of Spanish
- Personal skills: self-discipline, productivity, analytical thinking, good social skills, responsibility, punctuality.

Peer Reviewed Publications

(including book chapters and accepted papers)

- 33) Dong L., Polyak, L. **Portnov, A.** (2024). “Isotopic constraints on the Late Pleistocene glacial water and sediment inputs to the central Arctic Ocean”. *Quaternary Science Reviews*
<https://doi.org/10.1016/j.quascirev.2024.108733>
- 32) Kumar, A., Cook, A.E., **Portnov, A.**, Skopec, S., Frye, M., Palmes, S. (2024). “Bottom simulating reflections across the northern Gulf of Mexico slope”, *Marine and Petroleum Geology*, 106870, ISSN 0264-8172,
<https://doi.org/10.1016/j.marpetgeo.2024.106870>.
- 31) Overduin, P. P., **Portnov, A.**, Ruppel, C. D. (2023). “Permafrost Beneath Arctic Ocean Margins”. NOAA Arctic Report Card, NOAA technical report OAR ARC; 23-10. <https://doi.org/10.25923/fzwe-6432>
- 30) **Portnov, A.**, Peter B. Flemings, Kehua You, Kevin Meazell, Michael R. Hudec, Dallas B. Dunlap (2023). Low temperature and high pressure dramatically thicken the gas hydrate stability zone in rapidly formed sedimentary basins, *Marine and Petroleum Geology*, v.158, Part A
<https://doi.org/10.1016/j.marpetgeo.2023.106550>.

- 29) Varona, G.M., Flemings, P.B., **Portnov, A.** (2023). “Hydrate-bearing sands in the Terrebonne Basin record the transition from ponded deposition to bypass in the deep-water Gulf of Mexico”. *Marine and Petroleum Geology*. 151, 106172. <https://doi.org/10.1016/J.MARPETGEO.2023.106172>
- 28) Cook, A.E., **Portnov, A.**, Heber, R.C., Vadakkepuliambatta, S., Bünz, S. (2023). Widespread subseafloor gas hydrate in the Barents Sea and Norwegian Margin. *Earth Planet. Sci. Lett.* 604, 117993. <https://doi.org/10.1016/J.EPSL.2023.117993>
- 27) **Portnov, A.**, Kehua You, Peter B. Flemings, Ann E. Cook, Mahdi Heidari, Derek E. Sawyer, Stefan Bünz (2023). “Dating submarine landslides using the transient response of gas hydrate stability”. *Geology*; 51 (4): 387–391. doi: <https://doi.org/10.1130/G50930.1>
- 26) Martinez G.O., D. E. Sawyer, **A. Portnov** (2022). “Seismic Geomorphology of the Chandeleur Submarine Landslide in the Northern Gulf of Mexico”. Geological Society, London, Special Publications, Volume 525 <https://doi.org/10.1144/SP525-2021-12>
- 25) Serov, P., **A. Portnov** (2022) “Gas Hydrate Potential in the Kara Sea”. *World Atlas Submar. Gas Hydrates Cont. Margins* 255–259. https://doi.org/10.1007/978-3-030-81186-0_21
- 24) **Portnov, A.**, A.E. Cook, D.E. Sawyer (2022) “Bottom Simulating Reflections and Seismic Phase Reversals in the Gulf of Mexico”. *World Atlas Submar. Gas Hydrates Cont. Margins* 315–322. https://doi.org/10.1007/978-3-030-81186-0_26
- 23) Klasek, S., W.L. Hong, M. Torres, S. Ross, K. Hostetler, **A. Portnov**, F. Grundger, F. Colwell (2021) “Distinct methane-dependent biogeochemical states in Arctic seafloor gas hydrate mounds”. *Nature Communications*, 6296. <https://doi.org/10.1038/s41467-021-26549-5>
- 22) **Portnov, A.**, A.E. Cook, Vadakkepuliambatta, S (2021) “Diverse Gas Composition Controls the Moby-Dick Gas Hydrate System in the Gulf of Mexico”. *Geology*, v.49, DOI:10.1130/G49310.1
- 21) Flemings, P. B., S. C. Phillips, R. Boswell, T. S. Collett, A. E. Cook, T. Dong, M. Frye, D. S. Goldberg, G. Guerin, M. E. Holland, J. Jang, K. Meazell, J. Morrison, J. I. O’Connell, E. G. Petrou, T. Pettigrew, P. J. Polito, **A. Portnov**, M. Santra, P.J. Schultheiss, Y. Seol, W. Shedd, E. A. Solomon, C. M. Thomas, W. F. Waite, K. You (2020) “Pressure coring a Gulf of Mexico deep-water turbidite gas hydrate reservoir: Initial results from The University of Texas–Gulf of Mexico 2-1 (UT-GOM2-1) Hydrate Pressure Coring Expedition”, *AAPG Bulletin*, v. 104, no. 9 (September 2020), pp. 1847–1876 DOI:10.1306/05212019052
- 20) **Portnov, A.**, M. Santra, A.E. Cook, D.E. Sawyer (2020) “The Jackalope gas hydrate system in the northeastern Gulf of Mexico”. *Marine and Petroleum Geology*, <https://doi.org/10.1016/j.marpetgeo.2019.08.036>
- 19) Ferré, B., P. G. Jansson, M. Moser, P. Serov, **A. Portnov**, C. Graves, F. Gründger, C. Berndt, M. F. Lehmann, H. Niemann (2020) “Reduced methane seepage from Arctic sediments during cold bottom water conditions” *Nature Geoscience* 10.1038/s41561-019-0515-3
- 18) **Portnov, A.**, A.E. Cook, D.E. Sawyer, C. Yang, J.I.T. Hillman, W.F. Waite (2019) “Clustered BSRs: Evidence for gas hydrate-bearing turbidite complexes in folded regions, example from the Perdido Fold Belt, northern Gulf of Mexico”. *Earth and Planetary Science Letters*, v. 528, p. 115843. <https://doi.org/10.1016/j.epsl.2019.115843>
- 17) Dvornikov, Y, M. Leibman, A. Khomutov, A. Kizyakov, P. Semenov, I. Bussmann, E. Babkin, B. Heim, **A. Portnov**, E. Babkina, I. Streletskaya, A. Chetverova, A. Kozachek, H. Mayer (2019) “Gas-emission craters of Yamal and Gydan peninsula: starting stages for new lake formation.” *Permafrost and Periglacial Processes*, DOI: 10.1002/ppp.2014

- 16) Waage, M., **A. Portnov**, P. Serov, S. Bünz, K. A. Waghorn, S. Vadakkepuliambatta, J. Mienert, K. Andreassen (2019). "Geological Controls on Fluid Flow and Gas Hydrate Pingo Development on the Barents Sea Margin" *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2018GC007930
- 15) Rekant, P., N.Sobolev, **A. Portnov**, A. Pakhalko, B. Belyatsky, V. Kaban'kov, I. Andreeva (2019) "Basement segmentation and tectonic structure of the Lomonosov Ridge, Arctic Ocean: Insights from bedrock geochronology" *Journal of Geodynamics* 128 (38-54). <https://doi.org/10.1016/j.jog.2019.05.001>
- 14) **Portnov, A.**, A. Cook, D. Sawyer, M. Heidari, M. Santra, M. Nikolinakou (2020) "Salt-driven evolution of a gas hydrate reservoir in Green Canyon, Gulf of Mexico". *AAPG Bulletin*, DOI: 10.1306/10151818125
- 13) Sawyer, D.E, Mason, R.A., Cook, A.E., and **Portnov, A** (2019) "Submarine landslides induce massive waves in subsea brine pools." *Scientific Reports*, v. 9, p. 128.10.1038/s41598-018-36781-7
- 12) Semenov, P., **A. Portnov**, A. Krylov, A. Egorov, B. Vanshtein (2019) "Geochemical evidence for seabed fluid flow linked to the subsea permafrost outer border in the South Kara Sea." *Geochemistry*. <https://doi.org/10.1016/j.chemer.2019.04.005>
- 11) Cook, A., **A. Portnov** (2019). "Comment on: Gas hydrates in coarse-grained reservoirs interpreted from velocity pull up: Mississippi Fan, Gulf of Mexico". *Geology* (2019) 47 (3): e457. <https://doi.org/10.1130/G45609C.1>
- 10) **Portnov, A.**, J. Mienert, M. Winsborrow, S. Vadakkepuliambatta, K. Andreassen, P. Semenov, V. Gatallin (2018) "Shallow carbon storage in ancient buried thermokarst in the South Kara Sea". *Scientific Reports* 8, 14342, doi:10.1038/s41598-018-32826-z.
- 9) Hong, W., M. Torres, **A. Portnov**, M. Waage, B. Haley, A. Lepland (2018) "Variations in gas and water pulses at an Arctic seep: fluid sources and methane transport". *Geophysical Research Letters*
- 8) Arunima S., E.K.L. Åström, W. Hong, **A. Portnov**, M. Waage, P. Serov, M. L. Carroll and J. Carroll (2018) "Geophysical and geochemical controls on the megafaunal community of a high Arctic cold seep". *Biogeosciences Discussions*
- 7) Serov, P., S. Vadakkepuliambatta, J. Mienert, H. Patton, **A. Portnov**, A. Silyakova, G. Panieri, M. L. Carroll, J. Carroll, K. Andreassen and A. Hubbard (2017). "Postglacial response of Arctic Ocean gas hydrates to climatic amelioration." *Proceedings of the National Academy of Sciences* 114(24): 6215-6220.
- 6) **Portnov, A.**, S. Vadakkepuliambatta, J. Mienert and A. Hubbard (2016). "Ice-sheet-driven methane storage and release in the Arctic." *Nature Communications* 7.
- 5) Serov, P., **A. Portnov**, J. Mienert, P. Semenov and P. Ilatovskaya (2015). "Methane release from pingo-like features across the South Kara Sea shelf, an area of thawing offshore permafrost." *Journal of Geophysical Research: Earth Surface* 120(8): 1515-1529.
- 4) Rekant, P., H. A. Bauch, T. Schwenk, **A. Portnov**, E. Gusev, V. Spiess, G. Cherkashov and H. Kassens (2015). "Evolution of subsea permafrost landscapes in Arctic Siberia since the Late Pleistocene: a synoptic insight from acoustic data of the Laptev Sea." *arktos* 1(1): 11.
- 3) **Portnov, A.**, J. Mienert and P. Serov (2014). "Modeling the evolution of climate-sensitive Arctic subsea permafrost in regions of extensive gas expulsion at the West Yamal shelf." *Journal of Geophysical Research: Biogeosciences* 119(11): 2014JG002685.
- 2) **Portnov, A.**, A. J. Smith, J. Mienert, G. Cherkashov, P. Rekant, P. Semenov, P. Serov and B. Vanshtein (2013). "Offshore permafrost decay and massive seabed methane escape in water depths >20 m at the South Kara Sea shelf." *Geophysical Research Letters* 40(15): 3962-3967.

- 1) Taldenkova, E. E., S. D. Nikolaev, P. V. Rekant, I. A. Pogodina and **A. Portnov** (2009). "Some aspects of the paleogeography of the Lomonosov Ridge (Arctic Ocean) inferred from lithology and microfossils (in Russian)." *Proceedings of the MSU, Series Geography* 4: 45-54.

Articles in Peer Review

- Lawal, A. M., **Portnov, A.**, Cook, A., Kumar, A. (2024, in review). Pockmarks, mud volcanoes and seeps in the northern Gulf of Mexico: trends and controls on widespread gas venting. *Geochemistry, Geophysics, Geosystems*. Submitted August 2024.
- Kumar, A., Cook, A., Portnov, A., Lawal, A. M. (2024, in review). Pockmark occurrence in the Gulf of Mexico influenced by glacial cycles and hydrate stability. *Geochemistry, Geophysics, Geosystem*. Submitted July 2024.

Other publications

- Flemings, P.B. et al (2021) UT-GOM2-2 Prospectus: Science and Sample Distribution Plan, doi:10.2172/1827729.
- Mienert, J., Panieri, G., Gründger, F., Hong, W.-L., Johnson, J., Plaza-Faverola, A., Jansson, P., Portnov, A., Waghorn, K.A., 2014. CAGE14-5 Cruise Report: Fram Strait – NW Svalbard. CAGE – Cent. Arct. Gas Hydrate, Environ. Clim. Rep. Ser. 2. <https://doi.org/10.7557/CAGE.6922>
- Alexey Portnov and Ann Cook (2020) Ohio State University: Methane Hydrate Prospect Analysis in the Gulf of Mexico. <https://www.boem.gov/oil-gas-energy/resource-evaluation/ohio-state-university-methane-hydrate-prospect-analysis-gulf>

Conference Abstracts

- Alexey Portnov** (2024) Gas hydrates in dynamic geological systems. *Geological congress of Spain*, Ávila, Spain.
- Alexey Portnov**, Peter B Flemings, Kevin Meazell, Michael Hudec, Dallas Dunlap (2023) Anomalous deep gas hydrate stability zone in rapidly formed sedimentary basins. *15th International Conference on Gas in Marine Sediments (GIMS 15)*, Cádiz, Spain.
- Alexey Portnov**, Peter B Flemings, Kevin Meazell, Michael Hudec, Dallas Dunlap (2022) Rapid Sedimentation reduces the thermal gradient, increases pore pressure, and dramatically deepens the base of the gas hydrate stability zone in rapidly formed sedimentary basins. *AAPG/SEG IMAGE meeting*, Houston, USA
- Alexey Portnov**, Kehua You, Peter B Flemings, Ann E Cook, Mahdi Heidari, Derek E Sawyer (2022) Dating submarine landslides using the transient gas hydrate stability. *International Conference on Seafloor Landforms, Processes and Evolution (2022)*, Malta
- Alexey Portnov**, Ann Cook, Matthew Frye, Stephen Palmes, Stuart Skopec (2021) Prospecting for Gas Hydrate Using Public Geophysical Data in the Northern Gulf of Mexico. *AAPG/SEG IMAGE meeting*, Houston, USA
- Alexey Portnov**, Ann Cook, Matthew Frye, Stephen Palmes, Stuart Skopec (2020) Prospecting for gas hydrate using public geophysical data in the northern Gulf of Mexico *AGU Fall Meeting, virtual*
- Alexey Portnov**, Ann Cook, Derek Sawyer, Sunil Vadakkepuliambatta (2020) New gas hydrate prospect Moby-Dick in a dipping coarse-grained reservoir in Green Canyon, US Gulf of Mexico. *AGU Fall Meeting, virtual*
- Alexey Portnov**, Ann Cook, Matthew Frye, Stephen Palmes (2020) "Gulf of Mexico gas hydrate exploration using public geophysical and petrophysical datasets". *Gordon Research Conference*, Galveston, USA
- Alexey Portnov**, Ann Cook, Manasij Santra, Derek Sawyer (2019) "Geological controls on a new gas hydrate system Jackalope in the northern Gulf of Mexico". *AGU Fall Meeting*, San Francisco, USA
- Alexey Portnov**, Ann Cook, Urmi Majumdar, Derek Sawyer (2018) "Underexplored gas hydrate reservoirs associated with salt diapirism and turbidite deposition in the Northern Gulf of Mexico". *AGU Fall Meeting*, Washington DC, USA
- Ryan Heber, Ann Cook, **Alexey Portnov**, Sunil Vadakkepuliambatta, Stefan Bünz (2018) "Gas Hydrate Occurrence and Saturation in the Barents and Norwegian Sea Using Industry Well Logs and Seismic Data". *AGU Fall Meeting*, Washington DC, USA
- Scott Klasek, WeiLi Hong, **Alexey Portnov**, Marta E Torres, Frederick S Colwell (2018) "Methane-driven microbial community succession in Arctic seafloor gas hydrate mounds". *AGU Fall Meeting*, Washington DC, USA

- Alexey Portnov**, Ann Cook, Derek Sawyer, Mahdi Heidari, Manasij Santra, Maria Nikolinakou (2018) “Salt-driven evolution of a gas hydrate reservoir in Green Canyon, Gulf of Mexico” Gas in Marine Sediments (GIMS), Haifa, Israel
- Ann Cook, **Portnov, A.**, Madof, A. S. (2018). “Identifying gas hydrate systems using velocity pull-ups”. Gas in Marine Sediments (GIMS), Haifa, Israel
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- Derek Sawyer, Alan Mason, Ann Cook, **Alexey Portnov**, Jess Hillman (2017). “Hydrate-bearing Submarine Landslides in the Orca Basin, Gulf of Mexico”. AGU Fall Meeting, New Orleans, USA
- Alexey Portnov**, Maja Sojtaric (2017). “Make it fun for everyone: visualization techniques in geoscience”. AGU Fall Meeting, New Orleans, USA
- Alexey Portnov**, Malin Waage, Kate Waghorn, Pavel Serov Jürgen Mienert, Stefan Buenz, Karin Andreassen (2017). “Geophysical 3D characterization of new gas hydrate pingos offshore Svalbard”. International Conference on Gas Hydrate (ICGH), Denver, USA
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- Jürgen Mienert, **Alexey Portnov**, Sunil Vadakkepuliambatta, Alun Hubbard, Henry Patton, Karin Andreassen, Jochen Knies (2016). “Last Ice age mediated Arctic greenhouse-gas release systems”. European Geophysical Union (EGU) conference, Vienna, Austria
- Alexey Portnov**, Sunil Vadakkepuliambatta, Jürgen Mienert, Alun Hubbard (2016). “Arctic methane storage and release across a formerly glaciated polar margin”. International Conference on Arctic Margins, Trondheim, Norway
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- Alexey Portnov**, Jürgen Mienert, Pavel Serov (2014). «Modeled evolution of subsea permafrost associated with extensive gas escape offshore the West Yamal shelf». Minerals of The Ocean-7, Saint-Petersburg, Russia
- Alexey Portnov**, Jürgen Mienert, Georgy Cherkashov (2013). “Offshore permafrost decay and massive seabed methane escape in water depths >20 m at the South Kara Sea shelf”. AGU Fall Meeting, San Francisco, USA
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- Alexey Portnov**, P. Rekant, P. Semyenov, J. Mienert (2013). “New HRS data indicating interaction of gas migration processes and subsea permafrost at West Yamal shelf (Kara Sea)”. PERGAMON workshop, Helsinki, Finland
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