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Peer Reviewed Publications

(including book chapters and preprints)

- 26) **Portnov, A.**, Y. Kehua, P. B. Flemings, A. E. Cook, M. Heidari, D. E. Sawyer “Dating submarine landslides using the transient response of gas hydrate stability” (2022). Preprint at <https://www.researchsquare.com/article/rs-1125310/v1>; DOI:10.21203/rs.3.rs-1125310/v1. In review in *Nature Communications*
- 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](https://doi.org/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. Streletskaia, 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

- Portnov, A., K. You, P. B. Flemings, A. E. Cook, M. Heidari, D. E. Sawyer (November 2021) "Dating submarine landslides using the transient response of gas hydrate stability". *Nature Communications*
- Martinez G.O., D. E. Sawyer, **A. Portnov** (May 2021) "Seismic Geomorphology of the Chandeleur Submarine Landslide in the Northern Gulf of Mexico". Geological Society of London Special Publications.
- Heber, R.C., A.E. Cook, **A. Portnov**, S. Vadakkepuliambatta, S. Bünz (June 2020) "Evidence for widespread, low saturation gas hydrate in the Barents and Norwegian Seas". *Geochemistry, Geophysics, Geosystems*

Other publications

- Flemings, P.B. et al (2021) UT-GOM2-2 Prospectus: Science and Sample Distribution Plan., doi:10.2172/1827729.
- 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**, Kehua You, Peter B Flemings, Ann E Cook, Mahdi Heidari, Derek E Sawyer (2022) Dating submarine landslides using the transient response of gas hydrate stability Gordon Research Conference, California, 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
- Alexey Portnov**, Ann Cook, Derek Sawyer, Mahdi Heidari, Manasij Santra, Maria Nikolinakou (2018). "Salt-driven evolution of gas hydrate reservoirs in the deep-sea Gulf of Mexico". Gordon Research Conference, Galveston, USA
- Alexey Portnov**, Jurgen Mienert, Monica Winsborrow, Sunil Vadakkepuliambatta, Petr Semenov (2017). "Relict thermokarst carbon source kept stable within gas hydrate stability zone of the South Kara Sea". AGU Fall Meeting, New Orleans, USA
- 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 Sojtarić (2017). "Make it fun for everyone: visualization techniques in geoscience". AGU Fall Meeting, New Orleans, USA

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- 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
- Arunima Sen, Emmelie K.L. Åström, Wei Wei-Li Hong, Pavel Serov, **Alexey Portnov**, Malin Waage, Michal L. Carroll, JoLynn Carroll (2017). “High Arctic cold seeps explored through imagery”. International Conference on Gas Hydrate (ICGH), Denver, USA
- Pavel Serov, S. Vadakkepuliambatta, J. Mienert, H. Patton, **A. Portnov**, A. Silyakova, K. Andreassen, G. Panieri, J. Carroll, M. Carroll (2017). “Environmental changes of the last glacial cycle controlling a re-emerging Arctic gas hydrate system”. International Conference on Gas Hydrate (ICGH), Denver, USA
- Matveeva, Tatiana, **Portnov A**, Vanshtein B, Semenov P, Serov P, Vu Troung Son (2017). “Indications of gas hydrate presence within Phu Khanh, Nam Con Son, and Tu Chinh-Vung May basins in the South China Sea offshore Vietnam”. International Conference on Gas Hydrate (ICGH), Denver, USA
- Alexey Portnov**, Jürgen Mienert, Sunil Vadakkepuliambatta, Alun Hubbard, Henry Patton, Karin Andreassen, Jochen Knies (2016). “Ice-sheet-driven methane storage and release in the Arctic”. International Glaciological Society (IGS), Nordic branch meeting, Tromso, Norway
- 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
- Alexey Portnov**, Jürgen Mienert, Pavel Serov (2015). «Climate-sensitive subsea permafrost and related gas expulsions on the South Kara Sea shelf. Field studies and modeling results». European Geophysical Union (EGU) conference, Vienna, Austria
- 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
- Alexey Portnov**, P. Semyenov, J. Mienert (2013). “Fluid flow dynamics in association with subsea permafrost and possible gas hydrates at the Kara Sea”. 3P Arctic, Stavanger, Norway
- 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
- Alexey Portnov**, P. Rekant, P. Semyenov, (2012). “Subsea permafrost, gas seeps and gas hydrates in the Arctic: available data and perspective projects”. Minerals of The Ocean-6, Saint-Petersburg, Russia
- Alexey Portnov**, P. Rekant, E. Gusev, G. Cherkashov (2008). “Submarine permafrost in connection with the occurrence of gas saturated sediments within the upper part of the sedimentary cover of Laptev Sea”. Arctic Ocean Drilling Workshop, Bremerhaven, Germany
- Alexey Portnov**, P. Rekant, B. Vanstein (2006). “Acoustic geochemical evidence of subsurface gas occurrence off Kola Peninsula (Barents Sea)”. 16th conference of the TTR Program on Geo-Marine Research along European Continental Margin, Bremen, Germany