Curriculum Vitae

Qiang Wang

Contact

Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research (AWI)

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Employment

2018-present Permanent Senior Scientist, Alfred Wegener Institute, Bremerhaven, Germany

2007 – 2017 Project Research Scientist, Alfred Wegener Institute, Bremerhaven, Germany

Education

2004 – 2007 *PhD* in natural science (environmental physics), Alfred Wegener Institute & University of Bremen, Bremerhaven/Bremen, Germany.
PhD Thesis: The Finite Element Ocean Model and its aspect of vertical discretization

2000 – 2003 *Master*, physical electronics, Fudan University, Shanghai, China

1996 – 2000 *Bachelor*, illuminating engineering and light sources, Fudan University, Shanghai, China

Research Interests

- Dynamics of polar ocean and sea ice, drivers and impacts of ocean and sea ice changes, Arctic-midlatitude oceanic linkages, ice shelf-ocean interaction and sea level change, overflow dynamics and dense water production
- Development and application of FESOM (the Finite Element/volumE Sea ice-Ocean Model)

Professional Experience

2022-present Editor for Advances in Climate Change Research

2018-present Editor for Geoscientific Model Development

2022 – 2023 Associate editor for Frontiers in Marine Science

2020 – 2023 Member of the CLIVAR Ocean Model Development Panel (OMDP)

2019 – 2021 Guest professor, Hohai University, Nanjing, China

Research Grant

08.2021 – 07.2024 *CASA: Changes Across Scales in the Arctic Ocean*. AWI INSPIRES (INternational Science Program for Integrative Research in Earth Systems) project. Funding number: 21/17/G/INSPIRES-b. *PI*.

07.2021 – 06.2024 *EPICA: Eddy Properties and Impacts in the Changing Arctic*. BMBF MARE:N - Polarforschung/MOSAiC. 700k €, Funding number: 03F0889A. *PI*.

03.2017 – 02.2019 *ZUWEISS: 1,5°C-Ziel Und der Westantarktische EISSchild (1.5°C limit and the western Antarctic ice sheet)*. BMBF project. *co-PI*.

07.2016 – 06.2018 *NATMAP: Amending North Atlantic Model Biases to Improve Arctic Prediction.* A project in the framework of ERA.NET Plus Rus. Funding number: 363. *Participant*.

07.2016 – 06.2018 *Agulhas-II | Regional and Global Relevance*. A project in the BMBF SPACES Program (Science Partnerships for the Assessment of Complex Earth System Processes). 190k €, Funding number: 03F0750B. *PI*.

07.2013 – 06.2016 *Agulhas | Regional and Global Relevance*. A project in the BMBF SPACES Program (Science Partnerships for the Assessment of Complex Earth System Processes). 210k €, Funding number: 03G0835B. *PI*.

Students and postdocs

Jiao Chen (PhD, 2024-2026)

Xinyue Li (PhD, 2021-2024), Vasco Müller (Sci., 2021-2024),

Wenhao Zhang (PhD, 2018-2020), Natalia Tilinina (Sci., 2016-2018),

Dmitry Sein (Sci., 2013-2016), Xuezhu Wang (PhD, 2012-2016),

Claudia Wekerle (PhD, 2010-2013)

Advisory committee member for students and postdocs

Caili Liu (PhD, 2022-2024), Kou Wang (PhD, 2022-2024)

Finn Heukamp (PhD, 2021-2024), Claudia Hinrichs (Postdoc, 2019-2021)

Narges Khosravi (Postdoc, 2020-2021), Özgür Gürses (Postdoc, 2018-2019)

Patrick Scholz (PhD, 2009-2012)

Summer School Lectures

Aug. 2023 Course in the seminar of Nippon Foundation-POGO Centre of Excellence, Bremerhaven. Arctic Ocean: Insights into dynamics and recent modeling achievements.

July 2023 UNESCO/IOC-ODC Training Course on Regional Ocean Forecast System. Modeling the ocean using unstructured-grid systems.

June 2022 Course in the seminar of Nippon Foundation-POGO Centre of Excellence, Bremerhaven. Understanding Arctic Ocean changes with emerging modeling capabilities.

July 2018 UNESCO/IOC-ODC Training Course on Regional Ocean Forecast System, Qingdao. Circulation forecast model in coastal regions: An introduction to unstructured-mesh variable resolution modelling.

June 2017 UNESCO/IOC-ODC Training Course on Development of Coupled Regional Ocean Models, Qingdao. Unstructured-mesh ocean modelling: principle and applications.

July 2009 The 5th Sino-German Summer School, Ocean University of China, Qingdao. Ocean and coastal region modelling with the Finite Element method.

Expedition Experience

02.01 - 06.04.2005 ANT-XXII/3 Polarstern, Cape Town – Punta Arenas, CTD and CFC sampling

Peer-reviewed Publications

H-index 36, M-index 2

Submitted

Wang, Q. (2024). On the release and renewal of freshwater in the Beaufort Gyre of the Arctic Ocean, Journal of Physical Oceanography, submitted.

2024

108. **Wang, Q.**, Shu, Q., Bozec, A., Chassignet, E., Pier Giuseppe Fogli, Baylor Fox-Kemper, Andy McC. Hogg, Doroteaciro Iovino, Andrew E. Kiss, Nikolay Koldunov, Julien Le Sommer, Yiwen Li, Pengfei Lin, Hailong Liu, Igor Polyakov, Patrick Scholz, Dmitry Sidorenko, Shizhu Wang, and Xiaobiao Xu (2024). Impact of high resolution on Arctic Ocean simulations in Ocean Model Intercomparison Project phase 2 (OMIP-2), Geosci. Model Dev., 17, 347–379.

107. Li, X., **Wang, Q.***, Danilov, S., Koldunov, N., Liu, C., Müller, V., Sidorenko, D., Jung, T. (2024). Eddy activity in the Arctic Ocean projected to surge in a warming world, Nature Climate Change, 14, 156–162. https://doi.org/10.1038/s41558-023-01908-w.

106. Liu, C., **Wang, Q.***, Danilov, S., Koldunov, N., Müller, V., Li, X., Sidorenko, D. and Zhang, S.* (2023). Spatial scales of kinetic energy in the Arctic Ocean, JGR-oceans, accepted

105. Danilov S., Juricke, S., Nowak, K., Sidorenko, D., **Wang, Q.** (2023). Extracting spatial spectra using coarse-graining based on implicit filters, JAMES, accepted.

104. Wekerle, C., McPherson, R., von Appen, W., **Wang, Q.**, Timmermann, R., Scholz, P., Danilov, S., Shu, Q. and Kanzow, T. (2024). Atlantic Water warming increases melt below Northeast Greenland's last floating ice tongue, Nature Communications, 15, 1336.

103. Müller, V., **Wang, Q.**, Koldunov, N., Danilov, S., Sidorenko, D., & Jung, T. (2024). Variability of eddy kinetic energy in the Eurasian Basin of the Arctic Ocean inferred from a model simulation at 1-km resolution. Journal of Geophysical Research: Oceans, 129, e2023JC020139.

102. Danilov, S., Mehlmann, C., Sidorenko, D., **Wang, Q.** (2023). CD-type discretization for sea ice dynamics in FESOM version 2, Geosci. Model Dev., accepted

2023

101. **Wang, Q.,** Shu, Q., Wang, S., Beszczynska-Moeller, A., Danilov, S., de Steur, L., Haine, T., Karcher, M., Lee, C., Myers, P., Polyakov, I., Provost, C., Skagseth, O., Spreen, G. and Woodgate, R. (2023). A review of Arctic-Subarctic ocean linkages: Past changes, mechanisms and future projections. Ocean-Land-Atmos Res., 2, 0013, https://doi.org/10.34133/olar.0013

100. Heukamp, F., Aue, L., **Wang, Q**., Ionita, M., Kanzow, T., Wekerle, C., and Rinke, A. (2023). Cyclones Modulate the Control of the North Atlantic Oscillation on Transports into the Barents Sea, communications earth & environment, 4, 324.

99. Shi, X., Cauquoin, A., Lohmann, G., Jonkers, L., **Wang, Q.**, Yang, H., Sun, Y., and Werner, M.: Simulated stable water isotopes during the mid-Holocene and pre-industrial periods using AWI-ESM-2.1-wiso, Geosci. Model Dev., 16, 5153–5178.

98. Treguier, A. M., de Boyer Montégut, C., Bozec, A., Chassignet, E. P., Fox-Kemper, B., McC. Hogg, A., Iovino, D., Kiss, A. E., Le Sommer, J., Li, Y., Lin, P., Lique, C., Liu, H., Serazin, G., Sidorenko, D., **Wang, Q**., Xu, X., and Yeager, S. (2023). The mixed-layer depth in the Ocean Model Intercomparison Project (OMIP): impact of resolving mesoscale eddies, Geosci. Model Dev., 16, 3849–3872.

97. Yang, H., Lohmann, G., Stepanek, C., **Wang, Q.,** Huang, R., Shi, X., Liu, J., Chen, D., Wang, X., Zhong, Y., Yang, Q., Bao, Y., Müller, J. (2023). Satellite-observed strong subtropical ocean warming as an early signature of global warming, communications earth & environment, 4, 178.

96. Shu, Q., **Wang, Q.,** Guo, C., Song, Z., Wang, S., He, Y., and Qiao, F. (2023). Arctic Ocean simulations in the CMIP6 Ocean Model Intercomparison Project (OMIP), Geosci. Model Dev., 16, 2539-2563.

95. Heukamp, F. O., Kanzow, T., **Wang, Q.,** Wekerle, C., and Gerdes, R. (2023). Impact of cyclonic wind anomalies caused by massive winter sea ice retreat in the Barents Sea on Atlantic Water transport toward the Arctic: A model study. Journal of Geophysical Research: Oceans, 128, e2022JC019045.

94. Zhang, Y., Wu, C., Anderson, J., Danilov, S., **Wang, Q.**, Liu, Y., Wang, Q. (2023). Lake ice simulation using a 3D unstructured grid model. Ocean Dynamics 73, 219-230.

93. Cornish, S., Muilwijk, M. Scott, J. Marson, J., Myers, P. Zhang, W., **Wang, Q**., Kostov, Y., Johnson, H., and Marshall, J. (2023). Impact of sea ice transport on Beaufort Gyre liquid freshwater content, Clim. Dyn., https://doi.org/10.1007/s00382-022-06615-4.

92. Pan, R., Shu, Q., **Wang, Q.**, Wang, S., Song, Z., He, Y., and Qiao, F. (2023). Future Arctic climate change in CMIP6 strikingly intensified by NEMO-family climate models. Geophysical Research Letters, 50, e2022GL102077. https://doi.org/10.1029/2022GL102077

2022

91. **Wang, Q.** and Danilov, S. (2022). A synthesis of the upper Arctic Ocean circulation during 2000-2019: Understanding the roles of wind forcing and sea ice decline, Frontiers in Marine Science, 9, 863204. doi: 10.3389/fmars.2022.863204

90. **Wang, Q.**, Shu, Q., Danilov, S. and Sidorenko, D. (2022). An extreme event of enhanced Arctic Ocean export west of Greenland caused by the pronounced dynamic sea level drop in the North Atlantic subpolar gyre in the mid-to-late 2010s, Environ. Res. Lett., 17, 044046.

89. Khosravi, N.*, **Wang, Q.***, Koldunov, N., Hinrichs, C., Semmler, T., Danilov, S. and Jung, T. (2022). The Arctic Ocean in CMIP6 models: Biases and projected changes in temperature and salinity. Earth's Future, 10, e2021EF002282.

88. Shu, Q., **Q. Wang***, M. Arthun, S. Wang, Z. Song, M. Zhang, and F. Qiao* (2022). Arctic Ocean Amplification in a warming climate in CMIP6 models, Science Advances, 8, eabn9755, https://doi.org/10.1126/sciadv.abn9755

87. Shi, X., Werner, M., **Wang, Q.**, Yang, H. and Lohmann, G. (2022). Simulated Mid-Holocene and Last Interglacial climate using two generations of AWI-ESM, Journal of Climate, 35, 4211-4231.

86. Beech, N., Rackow, T., Semmler, T., Danilov, S., **Wang, Q.** and Jung, T. (2022). Long-term evolution of ocean eddy activity in a warming world, Nat. Clim. Chang. 12, 910-917. https://doi.org/10.1038/s41558-022-01478-3

85. Wang, S., **Wang, Q.,** Wang, M., Lohmann, G., and Qiao, F. (2022). Arctic Ocean freshwater in CMIP6 coupled models. Earth's Future, 10, e2022EF002878.

84. Streffing, J., Sidorenko, D., Semmler, T., Zampieri, L., Scholz, P., Andrés-Martínez, M., Koldunov, N., Rackow, T., Kjellsson, J., Goessling, H., Athanase, M., **Wang, Q**., Hegewald, J., Sein, D. V., Mu, L., Fladrich, U., Barbi, D., Gierz, P., Danilov, S., Juricke, S., Lohmann, G., and Jung, T.: AWI-CM3 coupled climate model: description and evaluation experiments for a prototype post-CMIP6 model, Geosci. Model Dev., 15, 6399-6427.

83. Uchida, T., Le Sommer, J., Stern, C., Abernathey, R. P., Holdgraf, C., Albert, A., Brodeau, L., Chassignet, E. P., Xu, X., Gula, J., Roullet, G., Koldunov, N., Danilov, S., **Wang, Q.,** Menemenlis, D., Bricaud, C., Arbic, B. K., Shriver, J. F., Qiao, F., Xiao, B., Biastoch, A., Schubert, R., Fox-Kemper, B., Dewar, W. K., and Wallcraft, A. (2022). Cloud-based framework for inter-comparing submesoscale-permitting realistic ocean models, Geosci. Model Dev., 15, 5829-5856.

82. von Appen, W., Baumann, T., Janout, M., Koldunov, N., Lenn, Y., Pickart, R., Scott, R., **Wang, Q.** (2022). Eddies and the distribution of eddy kinetic energy in the Arctic Ocean, Oceanography, 35, https://doi.org/10.5670/oceanog.2022.122

81. Hutter, N., Bouchat, A., Dupont, F., Dukhovskoy, D., Koldunov, N., Lee, Y., Lemieux, J., Lique, C., Losch, M., Maslowski, W., Myers, P.G., Ólason, E., Rampal, P., Rasmussen, T., Talandier, C., Tremblay, B., **Wang, Q.** (2022). Sea Ice Rheology Experiment (SIREx), Part II: Evaluating linear kinematic features in high-resolution sea-ice simulations, J. Geophys. Res.-Oceans, 127, e2021JC017666.

80. Bouchat, A., Hutter, N., Chanut, J, Dupont, F., Dukhovskoy, D., Garric, G., Lee, Y., Lemieux, J., Lique, C., Losch, M., Maslowski, W., Myers, P.G., Ólason, E., Rampal, P., Rasmussen, T., Talandier, C., Tremblay, B., **Wang, Q.** (2022). Sea Ice Rheology Experiment (SIREx), Part I: Scaling and statistical properties of sea-ice deformation fields, J. Geophys. Res.-Oceans, 127, e2021JC017667.

79. Scholz, P., Sidorenko, D., Danilov, S., **Wang, Q.,** Koldunov, N., Sein, D., and Jung, T. (2022). Assessment of the Finite-VolumE Sea ice–Ocean Model (FESOM2.0) -Part 2: Partial bottom cells, embedded sea ice and vertical mixing library CVMix, Geosci. Model Dev., 15, 335-363.

78. Yang, H., Lu, J., **Wang, Q.**, Shi, X., Lohmann, G. (2022). Decoding the dynamics of poleward shifting climate zones using aqua-planet model simulations. Clim. Dyn., 58, 3513–3526.

2021

77. **Wang, Q.,** Danilov, S., Mu, L., Sidorenko, D. and Wekerle, C. (2021). Lasting impact of winds on Arctic sea ice through the ocean's memory, The Cryosphere, 15, 4703-4725.

76. **Wang, Q.** (2021). Stronger variability in the Arctic Ocean induced by sea ice decline in a warming climate: Freshwater storage, dynamic sea level and surface circulation, J. Geophys. Res.-Oceans, 126, e2020JC016886.

75. **Wang, Q.,** Danilov, S., Sidorenko, D., Wang, X. (2021). Circulation Pathways and Exports of Arctic River Runoff Influenced by Atmospheric Circulation Regimes, Frontiers in Marine Science, 8, 707593.

74. **Wang, Q.**, Ricker, R. and Mu, L. (2021). Arctic sea ice decline preconditions events of anomalously low sea ice volume export through Fram Strait in the early 21st century, J. Geophys. Res.-Oceans, 126, e2020JC016607.

73. Shu, Q., **Wang, Q.***, Song, Z., Qiao, F.* (2021). The poleward enhanced Arctic Ocean cooling machine in a warming climate. Nature Communications, 12, 2966.

72. Hinrichs, C., **Wang, Q.**, Koldunov, N., Mu, L., Semmler, T., Sidorenko, D., & Jung, T. (2021). Atmospheric wind biases: A challenge for simulating the Arctic Ocean in coupled models? Journal of Geophysical Research: Oceans, 126, e2021JC017565

71. Sidorenko, D., Danilov, S., Streffing, J., Fofonova, V., Goessling, H., Scholz, P., **Wang, Q.**, Androsov, A., Cabos, W., Juricke, S., Koldunov, N., Rackow, T., Sein, D., Jung, T. (2021). AMOC variability and watermass transformations in the AWI climate model, Journal of Advances in Modeling Earth Systems, 13, e2021MS002582.

70. Danilov, S., Koldunov, N., Sidorenko, D. Scholz, P., **Wang, Q.** (2021). On the damping time scale of EVP sea ice dynamics, Journal of Advances in Modeling Earth Systems, 13, e2021MS002561.

69. Wang, S., **Wang, Q.,** Shu, Q., Song, Z., Lohmann, G., Danilov, S. and Qiao, F. (2021) Non-monotonic change of the Arctic Ocean freshwater storage capability in a warming climate, Geophysical Research Letters, 48, e2020GL090951.

68. Dou, T., Xiao, C., Liu, J., **Wang, Q.**, Pan, S., Su, J., Yuan, X., Ding, M., Zhang, F., Xue, K., Bieniek, P. A., and Eicken, H. (2021). Trends and spatial variation in rain-on-snow events over the Arctic Ocean during the early melt season, The Cryosphere, 15, 883–895.

2020

67. **Wang, Q.**, Koldunov, N. V., Danilov, S., Sidorenko, D., Wekerle, C., Scholz, P., Bashmachnikov, I., Jung, T. (2020). Eddy Kinetic Energy in the Arctic Ocean from a Global Simulation with a 1-km Arctic. Geophysical Research Letters, 47, e2020GL088550.

66. **Wang, Q.**, Wekerle, C., Wang, X., Danilov, S., Koldunov, N., Sein, D., Sidorenko, D., von Appen, W. and Jung, T. (2020). Intensification of the Atlantic Water supply to the Arctic Ocean through Fram Strait induced by Arctic sea ice decline, Geophysical Research Letters, 47, e2019GL086682.

65. Zhang, W., **Wang, Q.*,** Wang, X.*, Danilov, S. (2020). Mechanisms Driving the Interannual Variability of the Bering Strait Throughflow, J. Geophys. Res.-Oceans, 125, e2019JC015308. https://doi.org/10.1029/2019JC015308

64. Sidorenko, D., Sergey, D., Fofonova, V., Cabos, W., Koldunov, N., Scholz, P., Sein, D. and **Wang, Q.** (2020). AMOC, watermass transformations and their responses to changing resolution in the Finite-volumE Sea ice-Ocean Model. Journal of Advances in Modeling Earth Systems, 12, e2020MS002317.

63. Juricke, S., Danilov, S., Koldunov, N., Oliver, M., Sein, D. V., Sidorenko, D., and **Wang, Q.** (2020). A kinematic kinetic energy backscatter parametrization: From implementation to global ocean simulations. Journal of Advances in Modeling Earth Systems, 12, e2020MS002175.

62. Wekerle, C., Hattermann, T., **Wang, Q.**, Crews, L., von Appen, W.-J., and Danilov, S. (2020). Properties and dynamics of mesoscale eddies in Fram Strait from a comparison between two high-resolution ocean-sea ice models, Ocean Sci., 16, 1225-1246.

61. Chassignet, E. P., Yeager, S. G., Fox-Kemper, B., Bozec, A., Castruccio, F., Danabasoglu, G., Horvat, C., Kim, W. M., Koldunov, N., Li, Y., Lin, P., Liu, H., Sein, D. V., Sidorenko, D., **Wang, Q.,** and Xu, X. (2020). Impact of horizontal resolution on global ocean–sea ice model simulations based on the experimental protocols of the Ocean Model Intercomparison Project phase 2 (OMIP-2), Geosci. Model Dev., 13, 4595-4637.

60. Semmler, T., Danilov, S., Gierz, P., Goessling, H. F., Hegewald, J., Hinrichs, C., Koldunov, N., Khosravi, N., Mu, L., Rachow, T., Sein, D., Sidorenko, D., **Wang, Q.,** Jung, T. (2020). Simulations for CMIP6 with the AWI climate model AWI-CM-1-1. Journal of Advances in Modeling Earth Systems, 12, e2019MS002009

59. Yang, H., Lohmann, G., Lu, J., Gowan, E., Shi, X., Liu, J., **Wang, Q.** (2020). Tropical expansion driven by poleward advancing mid-latitude meridional temperature gradients, J. Geophys. Res.-Atmospheres, 125, e2020JD033158.

58. Tsujino, H., Urakawa, L. S., Griffies, S. M., Danabasoglu, G., Adcroft, A. J., Amaral, A. E., Arsouze, T., Bentsen, M., Bernardello, R., Böning, C. W., Bozec, A., Chassignet, E. P., Danilov, S., Dussin, R., Exarchou, E., Fogli, P. G., Fox-Kemper, B., Guo, C., Ilicak, M., Iovino, D., Kim, W. M., Koldunov, N., Lapin, V., Li, Y., Lin, P., Lindsay, K., Liu, H., Long, M. C., Komuro, Y., Marsland, S. J., Masina, S., Nummelin, A., Rieck, J.

K., Ruprich-Robert, Y., Scheinert, M., Sicardi, V., Sidorenko, D., Suzuki, T., Tatebe, H., **Wang, Q**., Yeager, S. G., and Yu, Z. (2020). Evaluation of global ocean–sea-ice model simulations based on the experimental protocols of the Ocean Model Intercomparison Project phase 2 (OMIP-2), Geosci. Model Dev., 13, 3643–3708.

57. Dmitry Sidorenko, Sergey Danilov, Nikolay Koldunov, Patrick Scholz, and **Qiang Wang** (2020). Simple algorithms to compute meridional overturning and barotropic streamfunction on unstructured meshes, Geosci. Model Dev., 13, 3337-3345.

56. Qi Shu, **Qiang Wang**, Zhenya Song, Fangli Qiao, Jiechen Zhao, Min Chu, and Xinfang Li (2020). Assessment of sea ice extent in CMIP6 with comparison to observations and CMIP5, Geophysical Research Letters, 47, e2020GL087965. https://doi.org/10.1029/2020GL087965

55. Kai Xiao, Meixiang Chen, **Qiang Wang**, Xuezhu Wang, Wenhao Zhang (2020). Low-frequency Sea Level Variability and Impact of Recent Sea Ice Decline on the Sea Level Trend in the Arctic Ocean from a High-Resolution Simulation, Ocean Dynamics, https://doi.org/10.1007/s10236-020-01373-5

54. Mu, L., Nerger, L., Tang, Q., Losa, S., Sidorenko, D., **Wang, Q.**, Semmler, T., Zampieri, L., Losch, M., and Goessling, H. (2020). Towards a data assimilation system for seamless sea ice prediction based on the AWI Climate Model, Journal of Advances in Modeling Earth Systems, 12, e2019MS001937. https://doi.org/10.1029/2019MS001937

53. Rahaman, H., Srinivasu, U., Panickal, S., Durgadoo, J. V., Griffies, S. M., Ravichandran, M., Bozec, A., Cherchi, A., Voldoire, A., Sidorenko, D., Chassignet, E. P., Danabasoglu, G., Tsujino, H., Getzlaff, K., Ilicak, M., Bentsen, M., Long, M. C., Fogli, P. G., Farneti, R., Danilov, S., Marsland, S. J., Valcke, S., Yeager, S. G. and **Wang, Q**. (2020). An assessment of the Indian Ocean mean state and seasonal cycle in a suite of interannual CORE-II simulations, Ocean Modelling, 145, 101503

2019

52. **Wang, Q.**, Wang, X., Wekerle, C., Danilov, S., Jung, T., Koldunov, N., Lind, S., Sein, D., Shu, Q., Sidorenko, D. (2019). Ocean heat transport into the Barents Sea: Distinct controls on the upward trend and interannual variability, Geophysical Research Letters, 46, 13180-13190, DOI: 10.1029/2019GL083837.

51. **Wang, Q.,** Marshall, J., Scott, J., Meneghello, G., Danilov, S. and Jung, T. (2019). On the feedback of ice-ocean stress coupling from geostrophic currents in an anticyclonic wind regime over the Beaufort Gyre. J. Phys. Oceanogr., 49, 369-383.

50. **Wang, Q.**, Wekerle, C., Danilov, S., Sidorenko, D., Koldunov, N., Sein, D., Rabe, B. and Jung, T. (2019). Recent sea ice decline did not significantly increase the total liquid freshwater content of the Arctic Ocean. J. Climate, 32, 15-32.

49. Sidorenko, D., Goessling, H. F., Koldunov, N. V., Scholz, P., Danilov, S. , Barbi, D., Cabos, W., Gurses, O., Harig, S., Hinrichs, C., Juricke, S., Lohmann, G., Losch, M., Mu, L., Rackow, T., Rakowsky, N., Sein, D., Semmler, T., Shi, X., Stepanek, C., Streffing, J., **Wang, Q.**, Wekerle, C., Yang, H. and Jung, T. (2019) Evaluation of FESOM2.0 coupled to ECHAM6.3: Pre-industrial and HighResMIP simulations, Journal of Advances in Modeling Earth Systems, 11, 3794-3815.

48. Scholz, P., Sidorenko, D., Gurses, O., Danilov, S., Koldunov, N., **Wang, Q.**, Sein, D., Smolentseva, M., Rakowsky, N., and Jung, T. (2019) Assessment of the Finite VolumE Sea Ice Ocean Model (FESOM2.0), Part I: Description of selected key model elements and comparison to its predecessor version, Geosci. Model Dev., 12, 4875-4899.

47. Muilwijk, Morven, Ilicak, Mehmet, Cornish, Sam B., Danilov, Sergey, Gelderloos, Renske, Gerdes, Rüdiger, Haid, Verena, Haine, Thomas W. N., Johnson, Helen L., Kostov, Yavor, Kovács, Tamás, Lique, Camille, Marson, Juliana M., Myers, Paul G., Scott, Jeffery, Smedsrud, Lars H., Talandier, Claude and **Wang, Qiang** (2019) Arctic Ocean response to Greenland Sea wind anomalies in a suite of model simulations, J. Geophys. Res.-Oceans, 124, 6286-6322.

46. Shu, Q., **Wang, Q.**, Su, J., Li, X. and Qiao, F. (2019). Assessment of the Atlantic water layer in the Arctic Ocean in CMIP5 climate models, Climate Dynamics, 53, 5279–5291.

45. Gürses, Ö., Kolatschek, V., **Wang, Q**., and Rodehacke, C. B. (2019) Brief communication: A submarine wall protecting the Amundsen Sea intensifies melting of neighboring ice shelves, The Cryosphere, 13, 2317–2324.

44. Rackow, T., Sein, D. V., Semmler, T., Danilov, S., Koldunov, N. V., Sidorenko, D., **Wang, Q.** and Jung, T. (2019). Sensitivity of deep ocean biases to horizontal resolution in prototype CMIP6 simulations with AWI-CM1.0, Geosci. Model Dev., 12, 2635-2656.

43. Koldunov, N., Danilov, S., Sidorenko, D., Hutter, N., Losch, M., Goessling, H., Rakowsky, N., Scholz, P., Sein, D., **Wang, Q.** and Jung, T. (2019). Fast EVP solutions in a high-resolution sea ice model, Journal of Advances in Modeling Earth Systems, 11, 1269-1284.

42. Wang, S., **Wang, Q**., Shu, Q., Scholz, P., Lohmann, G. and Qiao, F. (2019). Improving the Upper-ocean Temperature in an Ocean Climate Model (FESOM 1.4): Shortwave Penetration vs. Mixing Induced by Non-breaking Surface Waves, Journal of Advances in Modeling Earth Systems, 11, 545-557.

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