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海洋环流与波动重点实验室

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研究方向 极地海冰变化及预报预测

ResearchGate 个人主页：https://www.researchgate.net/profile/Yunhe-Wang-3

个人简介

主要从事极地海冰变化与预报预测研究，聚焦南、北极，在海冰变率特征、驱动机制、可预测性评价、预测模型发展方面取得一系列成果。主要科学发现：1）首次发现了南极冬季云-大气环流-海冰系统的耦合模态，系统阐明了 wave-3 在该耦合系统中所扮演的角色；2）发展了首个北极海冰厚度季节预测模型，可超前预测 12 个月；3）发展了基于 Markov 模型的北极太平洋扇区海冰季节预测模型，预测能力显著强于美国 GFDL-FLOR 数值模式；4）发展了基于人工智能的南极海冰季节内预测模型，预测能力显著强于 ECMWF、NCEP、GFDL-SPEAR 等主流数值模式。在 JC、GRL、TC、ERL、JGR 等期刊发表 SCI 论文 20 篇，其中第一/通讯作者 10 篇;授权发明专利 4 项,授权软件著作 1 项;主持国家自然科学基金等项目 5 项。ERL、Climate Dynamics 审稿人。

教育背景

2015.09 - 2020.07	中国科学院海洋研究所	环境科学	理学博士
2018.12 - 2019.12	美国哥伦比亚大学	海冰预测	访问学者
2011.12 - 2015.07	山东理工大学	勘查技术与工程	工学学士

工作经历

2023.10 - 至今	中国科学院海洋研究所	副研究员
2022.12 - 2023.10	中国科学院海洋研究所	助理研究员
2020.07 - 2022.11	中国科学院海洋研究所	博士后

论文著作

[1] **Yunhe Wang**, Xiaojun Yuan*, Haibo Bi, Yibin Ren, Yu Liang, Cuihua Li, and Xiaofeng Li*. Understanding Arctic Sea Ice Thickness Predictability by a Markov Model. *Journal of Climate*, 2023, 36(15): 4879–4897. https://doi.org/10.1175/JCLI-D-22-0525.1

[2] **Yunhe Wang**, Xiaojun Yuan*, Yibin Ren, Mitchell Bushuk, Qi Shu, Cuihua Li, Xiaofeng Li*. Subseasonal Prediction of Regional Antarctic Sea Ice by a Deep Learning Model. *Geophysical Research Letters*, 2023, 50(17), e2023GL104347. https://doi.org/https://doi.org/10.1029/2023GL104347

[3] **Yunhe Wang**, Xiaojun Yuan*, Mark A. Cane. Coupled mode of cloud, atmospheric circulation, and sea ice controlled by wave-3 pattern in Antarctic winter. *Environmental Research Letters*, 2022, 17(4): 044053. https://doi.org/10.1088/1748-9326/ac5272

[4] **Yunhe Wang**, Xiaojun Yuan*, Haibo Bi, Mitchell Bushuk, Yu Liang, Cuihua Li, Haijun Huang. Reassessing seasonal sea ice predictability of the Pacific-Arctic sector using a Markov model. *The Cryosphere*, 2022, 16(3): 1141-1156. https://doi.org/10.5194/tc-16-1141-2022

[5] **Yunhe Wang**, Xiaojun Yuan, Haibo Bi*, Yu Liang, Haijun Huang*, Zehua Zhang, and Yanxia Liu. The Contributions of Winter Cloud Anomalies in 2011 to the Summer Sea-Ice Rebound in 2012 in the Antarctic. *Journal of Geophysical Research: Atmospheres,* 2019, 124: 3435-3447. https://doi.org/10.1029/2018JD029435

[6] **Yunhe Wang**, Haibo Bi*, and Yu Liang. A satellite-observed substantial decrease in multiyear ice area export through the Fram Strait over the last decade. *Remote Sensing*, 2022, 14:2562. https://doi.org/10.3390/rs14112562

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[10] Weifu Sun, Haibo Bi*, Min Fu, Xi Liang, **Yunhe Wang***,Yu Liang, Jue Huang, Haijun Huang, Liwen Yan, Qinglong Yu, Shuang Liang. Spatiotemporal characteristics of sea ice transport in the Baffin Bay and its association with atmospheric variability. Acta Oceanologica Sinica, 2021, 40 (3): 1-17. https://doi.org/10.1007/s13131-021-1720-7

[11] Haibo Bi, **Yunhe Wang**, Yu Liang*, Weifu Sun*, Xi Liang, Qinglong Yu, Zehua Zhang, and Xiuli Xu. Influences of Summertime Arctic-Dipole Atmospheric Circulation on Sea Ice Concentration Variations in the Pacific Sector of the Arctic During Different Pacific Decadal Oscillation Phases. Journal of Climate, 2021, 34(8): 3003-3019. https://doi.org/10.1175/JCLI-D-19-0843.1

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[15] Liang Yu, Bi Haibo*,**Wang Yunhe**, Zhang Zehua,Huang Haijun*. Role of atmospheric factors in forcing Arctic sea ice variability. Acta Oceanologica Sinica,2020,39(9): 60-72. https://doi.org/10.1007/s13131-020-1629-6

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[18] Yu Liang, Haibo Bi, Haijun Huang, Ruibo Lei, Xi Liang, Bin Cheng, and **Yunhe Wang**. Contribution of warm and moist atmospheric flow to a record minimum July sea ice extent of the Arctic in 2020,The Cryosphere, 2022,16(3): 1107-1123. https://doi.org/10.5194/tc-16-1107-2022

授权专利

[1] **王云鹤**，毕海波，秦克玉，黄海军。一种面向 ArcGIS 极地矢量场可视化的角度转换方法，专利号：ZL201710674691.7，授权日：2019-09-13

[2] **王云鹤**，毕海波，刘一霖，黄海军。一种面向 IDL 语言海冰密集度求算优化算法，专利号：ZL201711282505.1，授权日：2019-08-02

[3] **王云鹤**，毕海波，黄海军。一种面向 IDL 极地向量场可视化的算法，专利号：ZL201711136282.8，授权日：2021-01-12

[4] **王云鹤**，毕海波，刘艳霞，黄海军。一种面向 IDL 投影转换算法，专利号：ZL201711136796.3，授权日：2021-02-09

软件著作

[1] **王云鹤**，毕海波，黄海军。极地向量可视化软件 V1.0，权利取得方式：原始取得，权利范围：全部权利，登记号：2017SR535147. 授权日期：2017-09-21，国家版权局

项目课题

1. 国家自然科学基金青年项目，42106223，南极冬季中层云对海冰的强迫机制研究，2022-01，2024-12，主持
2. 山东省自然科学基金青年项目，ZR2021QD059，基于马尔科夫模型南极海冰季节预测，2022-01，2024-12，主持
3. 博士后特别资助（站前），2020TQ0322，基于马尔科夫模型北极太平洋扇区海冰季节性预报，2021-01，2022-12，主持
4. 青岛市博士后应用研究项目，基于 Markov 模型北极太平洋扇区海冰面积季节预测，2021-01，2022-12，主持
5. 中国科学院海洋地质与环境重点实验室开放基金项目，MGE2021KG15，基于线性 Markov 模型南极海冰范围季节预测，2021-10，2023-09，主持

荣誉奖励

2023 Journal of Oceanology and Limnology 优秀论文奖

2022 海洋所"优秀博士后"激励计划

2019 博士国家奖学金