Ji-Hoon Oh

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Work History

Mar 2024 - Present **Postdoctoral Research Associate – Seoul National University, Seoul, South Korea**
School of Earth and Environmental Sciences

Education

Mar 2021 - Feb 2024 **Ph.D. – Pohang University of Science and Technology (POSTECH), Pohang, South Korea**
Department of Environmental Science and Engineering
Dissertation: Irreversibility of global climate system and its potential predictability
Advisor: Prof. Jong-Seong Kug

Mar 2019 - Feb 2021 **M. S. – Pohang University of Science and Technology (POSTECH), Pohang, South Korea**
Department of Environmental Science and Engineering
Thesis: Impact of Antarctic meltwater forcing on East Asian climate under global warming
Advisor: Prof. Jong-Seong Kug

Mar 2013 - Feb 2019 **B. S. – Pusan National University, Busan, South Korea**
Atmospheric Science

Fellowship

2022 Brain Korea 21 (BK21) POSTECHIAN Fellowship

Research Interests

- Climate Dynamics
- Irreversibility and tipping point of climate system
- Atlantic Meridional Overturning Circulation

- Earth System Modeling
- Marine Biogeochemical Circulation

Awards

- Best Poster Award, Korea Hydrographic and Oceanographic Agency, Jun 2019
- Best Poster Award, Korean Meteorological Society (KMS), Apr 2023
- Best Dissertation Award in the field of Natural Science (Sung-Kee Chung Award), Pohang University of Science and Technology (POSTECH), Feb 2024
- Best Dissertation Award, Korean Meteorological Society (KMS), Oct 2024

Publications

(† : co-first author, * : corresponding author)

< Published >

1. **Impact of Antarctic meltwater forcing on East Asian climate under greenhouse warming (2020), *Geophysical Research Letters* [link]**
   J.-H Oh, W.-S. Park, H.-G. Lim, K.-M. Noh, E. K. Jin, J.-S. Kug*
2. **Hysteresis of intertropical convergence zone to CO_2 forcing (2022), *Nature Climate Change* [link]**
   J.-S. Kug†*, **J.-H. Oh**†, S.-I. An, S.-W. Yeh, S.-K. Min, S.-W. Son, J. Kam, Y.-G. Ham, J. Shin
3. **Antarctic meltwater-induced dynamical changes in phytoplankton in the Southern Ocean (2022), *Environmental Research Letters* [link]**
   J.-H. Oh, K.-M Noh, H.-G Lim, E. K. Jin, S.-Y. Jun, J.-S. Kug*
4. **Centennial memory of the Arctic Ocean for future Arctic climate recovery in response to carbon dioxide removal (2022), *Earth's Future* [link]**
   J.-H. Oh, S.-I. An, J. Shin, J.-S. Kug*
5. **What controls the future phytoplankton change over Yellow and East China Seas under global warming? (2023), *Frontiers in Marine Science* [link]**
   D.-G. Lee, **J.-H. Oh**, K.-M. Noh, E.-Y. Kwon, Y.-H. Kim, J.-S. Kug*
6. **Increase in convective Extreme El Nino events in the CO_2 removal scenario (2023), *Science Advances* [link]**
   Pathirana. G, **J.-H. Oh**, W. Cai, S.-I. An, S.-K. Min, S.-Y. Jo, J. Shin, J.-S. Kug*
7. **Role of Atlantification in enhanced primary productivity in the Barents Sea (2024), *Earth's Future* [link]**
   K.-M. Noh, **J.-H. Oh**, H.-G. Lim, J.-S. Kug*
8. **Emergent climate change patterns originating from deep ocean warming in climate mitigation scenarios (2024), *Nature Climate Change* [link]**

J.-H. Oh, J.-S. Kug*, S.-I. An, F.-F. Jin, M. McPhaden, J. Shin

9. **Fast and Slow Responses of Atlantic Meridional Overturning Circulation to Antarctic Meltwater Forcing (2024), *Geophysical Research Letters* [link]**
   Y. Shin, X. Geng, **J.-H. Oh**, K.-M. Noh, E. K. Jin, J.-S. Kug*

10. **Deep ocean warming-induced El Niño changes (2024), *Nature Communications* [link]**
    G.-I. Kim, **J.-H. Oh**, N.-Y. Shin, S.-I. An, S.-W. Yeh, J. Shin, J.-S. Kug*

11. **Delayed ENSO impact on phytoplankton variability over the Western-North Pacific Ocean (2024), *Environmental Research Communications* [link]**
    D.-G. Lee, **J-H. Oh***, J.-S. Kug*

12. **Fast recovery of North Atlantic sea level in response to atmospheric CO_2 removal, *Communications Earth & Environment* [in press]**
    S. Wang, Y. Shin, **J.-H. Oh***, J.-S. Kug*

< In Progress >

1. **Emergence of the ocean CO_2 uptake hole under global warming, *Nature Communications (in revision)***
   H. Lee, K.-M. Noh, **J.-H. Oh**, S.-W. Park, Y. Shin*, J.-S. Kug*

2. **Emergence of South Atlantic Convergence Zone-ENSO connection under global warming, *Communications Earth & Environment (in revision)***
   J.-H. Park*, J.-S. Kug*, Y.-M. Yang, H.-J. Park, G.-I. Kim, **J.-H. Oh**, Chao. Liu, S.-I. An

3. **Pervasive fire danger continued under a negative emission scenario, *Nature Communications (in revision)***
   H.-J. Kim, J.-S. Kim*, S.-I. An*, J. Shin, **J.-H. Oh**, J.-S. Kug

4. **Forthcoming tipping point of Atlantic Meridional Overturning Circulation collapse with carbon stabilization, *Nature Climate Change (in revision)***
   J.-H. Oh, J.-S. Kug*, Y. Shin, X. Geng, S. Wang, F.-F. Jin, S.-I. An, S.-P. Xie, W. Liu

5. **Non-monotonic future changes in the North Atlantic warming hole under a fast CO2 emission scenario, *Journal of Climate (under review)***
   X. Geng, **J.-H. Oh**, Y. Shin, J. Shin, K.-M. Noh, J.-S. Kug*, S.-W. Park

6. **Two different phytoplankton blooming mechanisms over the East Asian Marginal Seas during El Niño decaying summers, *Science of the Total Environment (submitted)***
   D.-G. Lee, **J.-H. Oh**, J. Kam, J.-S. Kug*

7. **Amplified climate extremes in North America and Europe upon crossing the tipping point of Atlantic Meridional Overturning Circulation collapse *(in prep)***
   J.-H. Oh, G.-I. Kim, J.-H. Park, J.-S. Kug*, S.-P. Xie

8. **Reconciled early-warning signal in observation and model supports nearing tipping of the Atlantic Meridional Overturning Circulation (*in prep*)**
   Y. Shin, **J.-H. Oh**, N. Boers, S. Bathiany, M. Arthun, H. Kim, H. Lee, J.-S. Kug*

9. **The impact of urbanization on vegetation and climate on the island of Borneo,**

Indonesia (*in prep*)
D. Lee, S.-W. Park, **J.-H. Oh**, J.-S. Kug*

10. **Why is sea level irreversible?: role of SST pattern induced by deep ocean warming (*in prep*)**
S. Wang, Y. Shin, **J.-H. Oh**, H. Kim, J.-S. Kug*