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✓ Contact Information

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✓ Research Interests

· AI 기후환경
· 딥러닝 모델링
· 지구시스템 모델링
· 대양 간 상호작용, 열대 대양-동아시아 원격상관

✓ Scientific Work experience

· **서울대학교 환경계획연구소**
연구부교수, 2024 년 5 월 - 현재
책임연구원, 2024 년 3 월 - 2024 년 4 월
· **전남대학교 기초과학연구소**
학술연구교수, 2020 년 3 월 - 2024 년 2 월
박사후연구원, 2020 년 1 월 - 2020 년 2 월
· **호주 연방과학산업연구기구(Commonwealth Scientific and Industrial Research Organisation, CSIRO)**
박사후연구원, 2017 년 5 월 - 2020 년 1 월

✓ Education

· 이학박사, 과학기술대학 해양융합과학전공, 한양대학교, 2017 년 2 월
  - 학위 논문: 열대 서태평양 지역에서의 해양-대기 상호작용 변화에 대한 이해와 그 영향
· 이학석사, 과학기술대학 해양환경과학전공, 한양대학교, 2013 년 2 월
  - 학위 논문: 1997/98 년 겨울철 북서태평양 climate regime shift 연구: 모델링과 관측 자료 분석
· 이학학사, 과학기술대학 해양환경과학전공, 한양대학교, 2011 년 2 월

✓ Research Projects

· 이산화탄소농도 및 탄소배출량 감축 시나리오 관련 기후변화 연구 (총 6 억)

한국연구재단 세종과학펠로우십, 2024 년 5 월 – 2029 년 4 월

· 딥러닝 기법을 이용한 엘니뇨 예측 인자 규명을 통한 대양 간 상호작용 연구 (총 2.1 억)

한국연구재단 창의·도전연구기반지원사업, 2021 년 6 월 – 2024 년 5 월

✓ Honors and Awards

· 교육부 학술연구지원사업 우수성과 50 선(부총리 겸 교육부장관상), 2023 년 12 월

· 박사학위 우수논문상, 2017 년 2 월

· Best Student Poster Award in Physical Oceanography, 한국해양학회, 2014 년 11 월

· 우수논문발표상, 한국기상학회, 2013 년 10 월

✓ Published Papers (CA : 교신저자)

– 2025

20. **Jo, H.-S.,** et al (2025). Recent Advances in AI-based Global Climate Modeling and Forecasting. Atmosphere-Korea, 35, 4. https://doi.org/10.14191/Atmos.2025.35.4.585.

– 2024

19. Park, J.-H., Y.-M. Yang, Y.-G. Ham, **H.-S. Jo**, H.-J. Park, S.-E. Park, Chao Liu, Gagan Mandal, S.-I. An, and J.-S. Kug (2024). Significant winter Atlantic Nino effect on ENSO and its future projection. npj Climate and Atmospheric Science, 7, 1. https://doi.org/10.1038/s41612-024-00790-3.

18. Kim J.-G., **H.-S. Jo**, Y.-G. Ham, and J.-H. Park (2024). Distinct changes in the influence of North tropical Atlantic SST on ENSO under greenhouse warming: A comparison of CMIP5 and CMIP6. Geophysical Research Letters, 51, 15. https://doi.org/10.1029/2024GL109426. **(CA)**

– 2023

17. **Jo, H.-S.** and Y.-G. Ham (2023). Enhanced joint impact of the western hemispheric precursors on the El Nino-Southern Oscillation under greenhouse warming. Nature Communications, 14, 6356. https://doi.org/10.1038/s41467-023-42115-7.
16. Park, J.-H., S.-W. Yeh, J.-S. Kug, Y.-M. Yang, **H.-S. Jo**, H.-J. Kim, and S.-I. An (2023). Two regimes of inter-basin interactions between the Atlantic and Pacific Oceans on interannual timescales. npj Climate and Atmospheric Science, 6, 13. https://doi.org/10.1038/s41612-023-00332-3.

- 2022

15. **Jo, H.-S.**, Y.-G. Ham, J.-S. Kug, T. Li, J.-H. Kim, J.-G. Kim, and H. Kim (2022). Southern Indian Ocean Dipole as a trigger for Central Pacific El Nino since the 2000s. Nature Communications, 13, 6965. https://doi.org/10.1038/s41467-022-34721-8.
14. Lee. S.-B., S.-W. Yeh, J.-S. Lee, Y.-G. Park, M.-H. Kwon, S.-Y. Jun, and **H.-S. Jo** (2022). Roles of Atmosphere Thermodynamic and Ocean Dynamic Processes on the Upward Trend of Summer Marine Heatwaves Occurrence in East Asian Marginal Seas. Frontiers in Marine Science, 9. https://doi.org/10.3389/fmars.2022.889500.

- 2021

13. Cai, W., et al. (2021). Changing El Niño-Southern Oscillation in a warming climate. Nature Reviews Earth & Environment, 2, 628-644. https://doi.org/10.1038/s43017-021-00199-z.
12. Ham. Y.-G., H.-J. Lee, **H.-S. Jo**, S.-G. Lee, W. Cai, and R. R. Rodrigues (2021). Inter-Basin Interaction Between Variability in the South Atlantic Ocean and the El Nino/Southern Oscillation. Geophysical Research Letters, 48(15), e2021GL093338. https://doi.org/10.1029/2021GL093338.
11. Song, S.-Y., S.-W. Yeh, and **H.-S. Jo** (2021). Changes in the Characteristics of the North Pacific Jet as a Conduit for US Surface Air Temperature in Boreal Winter across the Late 1990s. Journal of Climate, 34(16), 6841-6853. https://doi.org/10.1175/JCLI-D-20-0353.1.

10. Yeh, S.-W., **H.-S. Jo**, S.-H. Hyun, W. Cai, and Y.-G. Ham (2021). Role of the eastern subtropical North Pacific Ocean on the El Nino's transition processes. Climate Dynamics, 56, 1285-1301. https://doi.org/10.1007/s00382-020-05530-w. **(CA)**
9. Park, J.-H., S.-I. An, J.-S. Kug, Y.-M. Yang, T. Li, and **H.-S. Jo** (2021). Mid-latitude leading double-dip La Nina. International Journal of Climatology, 41(S1), E1353-E1370. https://doi.org/10.1002/joc.6772.

- 2020

8. Cai, W., et al. (2020). Climate Impacts of the El Nino-Southern Oscillation on South America. Nature Reviews Earth & Environment, 1, 215-231. https://doi.org/10.1038/s43017-020-0040-3.

- 2019

7. **Jo, H.-S.**, S.-W. Yeh, and W. Cai (2019). An Episodic Weakening in the Boreal Spring SST-Precipitation Relationship in the Western Tropical Pacific since the Late 1990s. Journal of Climate, 32(13), 3837-3845. https://doi.org/10.1175/JCLI-D-17-0737.1.
6. Lee, J.-W., S.-W. Yeh, and **H.-S. Jo** (2019). Weather noise leading to El Nino diversity in an ocean general circulation model. Climate Dynamics, 52, 7235-7247. https://doi.org/10.1007/s00382-016-3438-3.

- 2017

5. Yeo, S.-R., S.-W. Yeh, Y. Won, **H.-S. Jo**, and W. Kim (2017). Distinct mechanisms of Korean surface temperature variability during early and late summer. Journal of Geophysical Research: Atmospheres, 122(12), 6137-6151. https://doi.org/10.1002/2017JD026458.
4. Choi, Y.-S., W. Kim, S.-W. Yeh, M.-J. Kwon, H. Masunaga, and **H.-S. Jo** (2017). Revisiting the iris effect of tropical cirrus clouds with TRMM and A-Train satellite data. Journal of Geophysical Research: Atmospheres, 122(11), 5917-5931. https://doi.org/10.1002/2016JD025827.

- 2015

3. **Jo, H.-S.**, S.-W. Yeh, and S.-K. Lee (2015). Changes in the relationship in the SST variability between the tropical Pacific and the North Pacific across the 1998/1999 regime shift. Geophysical Research Letters, 42(17), 7171-7178. https://doi.org/10.1002/2015GL065049.

- 2014

2. **Jo, H.-S.**, S.-W. Yeh, and B. P. Kirtman (2014). Role of the western tropical Pacific in the North Pacific regime shift in the winter of 1998/1999. Journal of Geophysical Research: Oceans, 118(9), 6161-6170. https://doi.org/10.1002/2013JC009527.

- 2013

1. **Jo, H.-S.**, S.-W. Yeh, and C.-H. Kim (2013). A possible mechanism for the North Pacific regime shift in winter of 1998/1999. Geophysical Research Letters, 40(16), 4380-4385. https://doi.org/10.1002/grl.50798.