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EDUCATION

- 09/1999-09/2003 **Stanford University**, Stanford CA. *Ph. D. in Environmental Fluid Mechanics and Hydrology*, Department of Civil and Environmental Engineering. Focus on high performance computing, immersed boundary method, global/coastal ocean modeling, coastal oceanography, higher-order numerical schemes, turbulent mixing and modeling. GPA-4.0/4.0.
Dissertation title: "On the development of a ghost-cell immersed boundary method and its application to large eddy simulation and geophysical fluid dynamics."
Advisor: Joel Ferziger. Committee: Robert Street, Stephen Monismith.
- 09/1997-06/1999 **Stanford University**, Stanford CA. *M.S. degree in Biomechanical Engineering*, Department of Mechanical Engineering. Coursework included cardiovascular biomechanics, computational fluid dynamics, and medical image information. GPA-3.9/4.0.
- 09/1991-06/1995 **National Taiwan University**, Taipei, Taiwan. *B.S. degree in Mechanical Engineering*. Coursework included computational mechanics, micro-electronics, and psychology. **Honor with President Award**
GPA-3.87/4.0.

PROFESSIONAL EXPERIENCE

- 02/2021-present **Director**, Ocean Center, National Taiwan University
- 08/2022-present **Distinguished Professor**, Institute of Oceanography, National Taiwan University
- 02/2017-07/2022 **Professor**, Institute of Oceanography, National Taiwan University
- 04/2012-02/2017 **Adjunct Associate Professor**, Department of Atmospheric Sciences, National Taiwan University
- 03/2012-02/2017 **Project Scientist II**, Oceanography Section, Climate and Global Dynamics Laboratory, National Center for Atmospheric Research
- 08/2010-03/2012 **Associate Professor**, Department of Atmospheric Sciences, National Taiwan University
- 08/2006-07/2010 **Assistant Professor**, Department of Atmospheric Sciences, National Taiwan University
- 10/2007-08/2008 **Adjunct Associate Researcher**, Preparatory office of Taiwan Typhoon and Flood Research Institute, National Applied Research Laboratory
- 09/2007-02/2008 **Adjunct Assistant Professor**, Institute of Marine Environmental Science and Technology, National Taiwan Normal University
- 11/2004-08/2006 **Post-doctoral researcher**, Computational Research Division, Lawrence Berkeley

National Laboratory

- 01/2005-05/2005 **Lecturer**, Department of Civil and Environmental Engineering, University of California at Berkeley
- 12/2003-12/2004 **Consultant**, Central Weather Bureau, Taipei, Taiwan
- 10/2003-10/2004 **Post-doctoral fellow**, Mechanical Engineering, Johns Hopkins University

PROFESSIONAL SERVICES

Society and committee

- 05/2018-present Advisory Committee, Earth Science Research Promotion Center
- 03/2014-03/2014 Proposal Review Panel, NOAA Climate Variability and Predictability Program
- 05/2011-03/2012 Chair of Academic Committee, The Meteorological Society of Republic of China
- 03/2009-07/2011 Chair and Organizer, The 16th Pacific-Asian Marginal Seas Meeting
- 10/2009-06/2010 Local Organizing Committee, The COAA 5th International Ocean-Atmosphere Conference
- 5/2008-7/2009 Chair and Organizer, International Workshop for Numerical Ocean Modeling and Prediction

Public services

- 2/2021-present Review Editor, Global Change and the Future Ocean
- 12/2019-present Editorial Board, Atmosphere
- 08/2018-present Associate Editor, Terrestrial, Atmospheric and Oceanic Sciences
- 7/2011-7/2014 Editor, ISRN Computational Mathematics
- 12/2011-12/2013 Guest editor, Prog. Oceanogr., Special issue in *Recent Advances of Oceanography in Pacific-Asian Marginal Seas*
- 05/2008-06/2010 Guest editor, Terrestrial, Atmospheric and Oceanic Sciences, Special issue in *Recent Advances in Numerical Ocean Modeling and Prediction*

Grant reviewers:

Delaware Sea Grant, USA; National Science Foundation, USA; National Oceanic and Atmospheric Administration, USA; Ministry of Science and Technology, Taiwan; European Research Council, Europa EU, Research Grants Council of Hong Kong, Hong Kong

Referee of Journals

Atmospheric Science Letters, Boundary-Layer Meteorology, Climate Dynamic, Computers and Fluids, Computer Methods in Applied Mech. and Engineering, Fluid Dynamics Research, Geophysical Research Letters, Geoscientific Model Development, International Journal of Numerical Methods in Fluids, International Journal of Thermal Sciences, International Journal of Heat and Fluid Flow, Journal of Atmospheric and Oceanic Technology, Journal of Climate, Journal of Computational Physics, Journal of Fluid Engineering, Journal of Fluid Mechanics,

Journal of Geophysical Research-Ocean, Journal of Hydraulic Engineering, Journal of Ocean University of China, Journal of Physical Oceanography, Journal of Turbulence, Journal of the Chinese Institute of Civil and hydraulic Engineering, Ocean Dynamics, Ocean Modelling, Plus One, Progress Oceanography, Quaternary International, Scientific Reports, SIAM Journal on Scientific Computing, Terrestrial Atmospheric, and Oceanic Sciences, Water Resources Research, Meteorological Bulletin, 氣象學報

Meeting

Convener, Session OS16: Ocean climate changes in the north Pacific ocean: Updates and challenges, AOGS 2021, August 1-5, Virtual.

Convener, Session OS13: High-resolution ocean and ocean-atmosphere coupled models: advances and challenges, AOGS 2018, June 3-8, Honolulu, USA.

Convener. Session AS37: Tropical-extratropical interaction and its impacts on the weather and Climate Systems, AOGS 2016, July 31-August 5, 2018, Beijing, USA

Lead convener, Session 5: The role of Pacific Asian marginal seas in the Pacific climate variability, The 18th PAMS Meeting, April 21-23, 2015, Naha, Japan.

Convener, Session SS46: Climate and global environmental changes in aquatic ecosystems, 2012 ASLO Aquatic Sciences Meeting, July 8-13, 2012, Lake Biwa, Japan

Organizer, The 16th PAMS Meeting, April 21-23, 2011, Taipei, Taiwan

Convener, Session GC06: Understanding historic climate variation in the northern Pacific, 2010 WPGM, June 22-25, Taipei, Taiwan.

Organizer, International Workshop for Numerical Ocean Modelling and Prediction, April 23-25, 2008, Taipei, Taiwan.

AWARDS AND HONORS

2021 科技部 109 年度傑出研究獎

2020 科技部最具影響力研究專書, “臺灣區域海洋學(二版)”

2018 科技部 107 年度優秀年輕學者研究計畫

2014 Most Cited Article Award, *Terrestrial, Atmospheric and Oceanic Sciences*

2013 Most Cited Article Award, *Terrestrial, Atmospheric and Oceanic Sciences*

2010 Best Paper Award of Dr. Shar-Qian Huang from *Terrestrial, Atmospheric and Oceanic Sciences*

2006 Editor's Citation for Excellence in Refereeing-Water Resources Research

2005 Outstanding Overseas Young Scientist, Foundation for the Advancement of Outstanding Scholarship, Taiwan

PUBLICATIONS

Refereed papers

1. **Tseng***, **Y.H.**, Tsao, S.-E., Kuo, Y.-C., Tsai, J.-Y. (2022), “TIMCOM model datasets for the CMIP6 Ocean Model Intercomparison Project,” *Ocean Modell.*, 179, 102109
2. Yu, Y., Chen, S.-H., **Tseng, Y.-H.**, Foltz, G.R., Zhang, R.-H., Gao, H. (2022), “Impacts of model resolution and ocean coupling on mean and eddy momentum transfer during the rapid intensification of super-typhoon Muifa (2011),” *Q. J. R. Meteorol. Soc.*, doi.org/10.1002/qj.4379
3. Li*, X., Hu, Z.Z., **Tseng, Y.H.**, Liu, Y., Liang, P. (2022). “A historical perspective of the La Niña event in 2020/2021”. *J. Geophys. Res.-Atmos.*, 127, e2021JD035546.
4. Shi, L., Ding*, R., Hu, S., Li, J., **Tseng, Y.**, Li, X. (2022), “Influence of the North Pacific Victoria Mode on the Spring Persistence Barrier of ENSO”, *J. Geophys. Res.-Atmos.*, 127, e2021JD036206.
5. **Tseng***, Y.-H., Huang, J.-H., Chen*, H.-C. (2022), “Improving the predictability of two types of ENSO by the characteristics of extratropical precursors,” *Geophys. Res. Lett.*, 49, e2021GL097190.
6. Hsiung, K.M., Kuo, Y.C., Lin, Y.T., **Tseng***, **Y.H.**, Han*, Y.S. (2022), “North Equatorial Current and Kuroshio velocity variations affect body length and distribution of the Japanese eel *Anguilla japonica* in Taiwan and Japan,” *Sci. Rep.*, 12, 2888.
7. Hsiung K.M., Ma, C., Ko, C.Y., **Tseng, Y.H.**, Kuo, Y.C., Han*, Y.S. (2022), “Effects of environmental factors within the spawning area and migration routes on the length of *Anguilla japonica* glass eels recruited to Taiwan.” *Mar. Ecol. Prog. Ser.*, 683,109-121.
8. Kuo*, Y.-N., Lo, M.-H., Liang, Y.-C., **Tseng, Y.-H.**, Hsu, C.-W. (2021), “Terrestrial water storage anomalies emphasize interannual variations in global mean sea level during 1997–1998 and 2015–2016 El Niño events,” *Geophys. Res. Lett.*, e2021GL094104.
9. Sun*, Z., Small, J., Bryan, F., **Tseng, Y.-H.**, Liu, H., Lin, P. (2021), “The impact of wind corrections and ocean-current influence on wind stress forcing on the modeling of Pacific North Equatorial Countercurrent,” *Ocean Modell.*, 166, 101876.
10. Chen, S.-H., Huang, C.-C., Kuo, Y.-C., **Tseng***, **Y.-H.**, Gu, Y., Earl, K., et al. (2021), “Impacts of Saharan mineral dust on air-sea interaction over North Atlantic Ocean using a fully coupled regional model,” *J. Geophys. Res.-Atmos.*, 126, e2020JD033586. doi.org/10.1029/2020JD033586.
11. Kuo, Y.-C., **Tseng***, **Y.H.** (2021), “Influence of anomalous low-level circulation on the Kuroshio in the Luzon Strait during ENSO,” *Ocean Modell.*, 159, 101759.

12. Zou, Q., Ding*, R., Li, J., **Tseng, Y.H.**, Hou, Z, Wen, T. and Ji, K. (2020), "Is the North Pacific Victoria mode a predictor of winter rainfall over South China?" *J. Clim.*, 33, 8833-8847.
13. Kuo, Y.-C., **Tseng***, **Y.H.** (2020), "Impact of ENSO on the South China Sea during ENSO decaying winter-spring modeled by a regional coupled model (a new mesoscale perspective)," *Ocean Modell.*, 152, 101655.
14. Wen, T., Chen, Q., Li, J., Ding*, R. **Tseng, Y.H.**, Hou, Z. and Li, X. (2020), "Influence of the North Pacific Victoria Mode on the Madden-Julian Oscillation," *Front. Earth Sci.*, 8, 584001.
15. Lee*, C.W., **Tseng, Y.H.**, Sui, C.H., Zheng, F. and Wu, E.T. (2020), "Characteristics of the Prolonged El Nino Events during 1960-2020," *Geophys. Res. Lett.*, e2020GL088345.
16. Yu, Y., Chen, S.-H., **Tseng, Y.-H.**, Guo, X., Shi, J., Liu, G., Zhang, C., Xu, Y., Gao*, H. (2020), "Importance of diurnal forcing on the summer salinity variability in the East China Sea," *J. Phys. Oceanogr.*, 50, 633-653.
17. Verri*, G., Pinardi, N., Bryan, F., **Tseng, Y.H.**, Coppini, G., Clementi, E. (2020), "A box model to represent estuarine dynamics in mesoscale resolution ocean models," *Ocean Modell.*, 148, 101587. doi.org/10.1016/j.ocemod.2020.101587.
18. Chen, H.-C., **Tseng***, **Y.H.**, Hu, Z.Z., Ding, R. (2020), "Enhancing the ENSO Predictability beyond the Spring Barrier," *Sci. Rep.*, 10, 984.
19. **Tseng***, **Y.H.**, Ding, R., Zhao, S., Kuo, Y.C., Liang, Y.C. (2020), "Could the North Pacific Oscillation be modified by the initiation of the East Asian Winter Monsoon?" *J. Clim.*, 33, 2389-2406.
20. Ding*, R., Li, J., Yang, R., **Tseng, Y.H.**, Li, Y. and Ji, K. (2020), "On the differences between the South Pacific meridional and quadrupole modes," *J. Geophys. Res.-Ocean*, 125, e2019JC015500.
21. Ding*, R., **Tseng, Y.H.**, Li, J., Sun, C., Xie, F. and Hou, Z. (2019), "Relative contributions of North and South Pacific sea surface temperature anomalies to ENSO," *J. Geophys. Res.-atmos.*, 124, 6222-6237.
22. Sun*, Q., Whitney, M.M., Bryan, F.O. and **Tseng, Y.H.** (2019), "Assessing the skill of the improved treatment of riverine freshwater in the Community Earth System Model (CESM) relative to a new salinity climatology," *J. Adv. Model. Earth Sy.*, 11, 1189-1206.
23. Ding*, R., Li, J., **Tseng, Y.H.**, Sun, C., Li, Y., Xing, N. and Li, X. (2019), "Linking the North American dipole to the Pacific meridional mode," *J. Geophys. Res.-atmos*, 124, 3020-3034.
24. Sun, Z., Liu*, H., Lin, P., **Tseng***, **Y.H.**, Small, J. and Bryan, F. (2019), "The modeling of the north equatorial countercurrent in the Community Earth System Model and its oceanic component," *J. Adv. Model. Earth Sy.*, 11, 531-544.
25. Chen, H.C., Sui*, C.H., **Tseng, Y.H.** and Huang, B.H. (2018), "Combined role of high- and low-frequency processes of equatorial zonal transport in terminating an ENSO event," *J. Clim.*, 31, 5461-5483.

26. Ding*, R., Li, J., **Tseng, Y.H.**, Li, L. Sun, C. and Xie, F. (2018), "Influences of the North Pacific Victoria Mode on the South China Sea summer monsoon," *Atmos.*, 9, 229.
27. Arpe*, K., Tsuang, B.-J., **Tseng, Y.-H.**, Liu, X.-Y., Leroy, S.A. (2018), "Quantification of climatic feedbacks on the Caspian Sea level variability and impacts from the Caspian Sea on the large-scale atmospheric circulation," *Theo. Appl. Climatol.*, 136, 475–488.
28. Huang, X., Hu, C., Huang, X., Chu, Y., **Tseng, Y.H.**, Zhang, G.J., Lin* Y. (2018), "A long-term tropical mesoscale convective systems dataset based on a novel objective automatic tracking algorithm," *Clim. Dyn.*, 51, 3145-3159.
29. Miller*, A. J. et al. (2017), "Coupled ocean-atmosphere modeling and predictions," *J. Marine Res.*, 75, 361-402.
30. Yang, X., Song*, Z., **Tseng, Y.H.**, Qiao F., Shu, Q. (2017), "Evaluation of three temperature profiles of a sublayer scheme to simulate SST diurnal cycle in a global ocean general circulation model," *J. Adv. Model. Earth. Sy.*, 9, 1994-2006.
31. Hu*, Z.Z., Humar, A., Zhu, J., Huang, B., **Tseng, Y.H.**, Wang, X. (2017), "On the shortening of the lead time of ocean warm water volume to ENSO SST since 2000," *Sci. Rep.*, 7, 4294.
32. Yuan*, Y., Yang, C., **Tseng, Y.H.**, Zhu, X.-H., Wang, H., Chen H. (2017), "Analysis of longer period variation of the Kuroshio current intrusion into the Luzon Strait using rectified wavelet power spectra," *Prog. Oceanogr.*, 156, 61-77.
33. **Tseng*, Y.H.**, Ding, R. and Huang*, X.-M. (2017), "The warm blob in the northeastern Pacific-the bridge leading to the 2015/16 El Niño," *Environ. Res. Lett.*, 12, 054019.
34. Sun*, Q., Whitney, M.M., Bryan, F.O. and **Tseng, Y.H.** (2017), "A box model for representing estuarine physical processes in Earth system models," *Ocean Modell.*, 112, 139-153.
35. Chow, C.H., **Tseng*, Y.H.**, Hsu, H.H. and Young, C.C. (2017), "The interannual variability of the subtropical countercurrent's eddies in the North Pacific associated with the Western-Pacific teleconnection pattern," *Cont. Shelf Res.*, 143, 175-184.
36. Ding*, R., Li, J., **Tseng, Y.H.**, Sun, C. and Xie F. (2017), "Joint impact of North and South Pacific extratropical atmospheric variability on the onset of ENSO events," *J. Geophys. Res.-atmos*, 122, 279-298.
37. Ding, R., Li*, J., **Tseng, Y.H.**, Sun, C. and Zheng F. (2017), "Linking a sea level pressure anomaly dipole over the North America to the central Pacific El Niño," *Clim. Dyn.*, 49, 1321-1339.
38. **Tseng*, Y.H.**, Hu, Z.Z., Ding, R. and Chen, H.C. (2017), "An ENSO prediction approach based on ocean conditions and ocean-atmosphere coupling," *Clim. Dyn.*, 48, 2025-2044.
39. Hu*, Z.Z., Huang, B., **Tseng. Y.H.**, Wang, W., Kumar, A. Zhu, J. and Jha, B. (2017), "Does vertical temperature gradient of the atmosphere matter for El Niño development?" *Clim. Dyn.*, 48, 1413-1429.
40. **Tseng*, Y.H.**, Bryan, F.O. and Whitney, M.M. (2016), "Impacts of the representation of

- riverine freshwater input in the Community Earth System Model,” *Ocean Modell.*, 105, 71-86.
41. Huang*, X., Tang, Q., **Tseng***, Y., Hu, Y., Baker, A. H., Bryan, F. O., Dennis, J., Fu, H., and Yang, G. (2016), “P-CSI v1.0, an accelerated barotropic solver for the high-resolution ocean model component in the Community Earth System Model v2.0,” *Geosci. Model Dev.*, 9, 4209-4225.
 42. Baker*, A. H., Hu, Y., Hammerling, D.M., **Tseng, Y.H.**, Xu, H., Huang, X and Bryan, F.O. (2016), “Evaluating statistical consistency in the ocean model component of the Community Earth System Model (pyCECT v2.0),” *Geosci. Model Dev.*, 9, 2391-2406.
 43. **Tseng***, Y.H. and co-authors (2016), “North and equatorial Pacific ocean circulation in the CORE-II hindcast simulations,” *Ocean Modell.*, 104, 143-170.
 44. Wada*, Y., Lo, M. H., Yeh, P. J.-F., Reager, J. T., Famiglietti, J. S., Wu, R.J. and **Tseng, Y. H.** (2016), “Fate of water pumped from underground and contributions to sea-level rise?” *Nature-Clim. Change*, 6, 777-780.
 45. **Tseng***, Y.H., Lin, Y.H., Lo, M.H. and Yang, S.C. (2016), “Diagnosing the possible dynamics controlling Sahel precipitation in the short-range ensemble Community Atmospheric Model hindcasts,” *Clim. Dyn.*, 47, 2747-2764.
 46. Ding, R., **Tseng, Y.H.**, Ha, K.J., Lee, J.Y. and Li*, J. (2016), “Interdecadal change in the lagged relationship between the Pacific-South American pattern and ENSO,” *Clim. Dyn.*, 47, 2867-2884.
 47. Yang, Y.J., Jan, S., Chang, M.-H., Wang, J., Mensah, V., Kuo, T.-H., Tsai, C.-J., Lee, C.-Y., Andres, M., Centurioni, L.R., **Tseng, Y.-H.**, Liang, M.-D. and Lai, J.-W. (2015), “Mean structure and fluctuations of the Kuroshio East of Taiwan from in situ and remote observations,” *Oceanogr.*, 28, 74–83
 48. Wright*, W.E., Gaun, B.T., **Tseng, Y.H.**, Cook, E.R., Wei, K.-Y. and Chang, S.-T. (2015), “Reconstruction of the springtime East Asian Subtropical Jet and Western Pacific pattern from a millennial-length Taiwanese tree-ring chronology,” *Clim. Dyn.*, 44, 1645-1659.
 49. Chen, H.C., Sui*, C.H., **Tseng, Y.H.** and Huang, B.H. (2015), “An analysis of the linkage of Pacific subtropical cells with the Recharge-Discharge processes in ENSO evolution,” *J. Clim.*, 28, 3786-3805.
 50. Ding, R., Li*, J., **Tseng, Y.H.**, Sun, C. and Guo, Y. (2015), “The Victoria mode in the North Pacific linking extratropical sea level pressure variations to ENSO,” *J. Geophys. Res.*, 120, 27-45.
 51. Ding, R., Li*, J., **Tseng, Y.H.** and Ruan, C. (2015), “Influence of the North Pacific Victoria mode on the Pacific ITCZ summer precipitation,” *J. Geophys. Res.*, 120, 964-979.
 52. Ding, R., Li*, J. and **Tseng, Y.H.** (2015), “The impact of south Pacific extratropical forcing on ENSO and comparisons with the North Pacific,” *Clim. Dyn.*, 44, 2017-2034.

53. Hu, Y., Huang, X., Baker, A., **Tseng, Y.H.**, Bryan, F.O., Dennis, J.M., Yang, G. (2015), "Improving the scalability of the ocean barotropic solver in the Community Earth System Model," In *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis (SC '15)*. ACM, New York, NY, USA, Article 42.
54. Small*, R. J. and co-authors (2014), "A new synoptic-scale resolving global climate simulation using the Community Earth System Model," *J. Adv. Model. Earth Sy.*, 6, 1065-1094.
55. Yuan*, Y., **Tseng, Y.H.**, Yang, C., Liao, G., Chow, C.H., Liu, Z., Zhu, X.-H., Chen H. (2014), "Variation in the Kuroshio intrusion: Modeling and interpretation of observations collected around the Luzon Strait from July, 2009 to March, 2011," *J. Geophys. Res.*, 119, 3447-3463.
56. Jo*, Y.H., Breaker, L.C., **Tseng, Y.H.** and Yeh, S.W. (2014), "A temporal multiscale analysis of the waters off the east coast of south Korea over the past four decades," *Terr. Atmos. Ocean. Sci.*, 25, 415-434.
57. Young, C.C., Liang, Y.C., **Tseng***, **Y.H.** and Chow, C.H. (2014), "Characteristics of the RAW filtered Leapfrog time-stepping scheme in the ocean general circulation model," *Mon. Weather Rev.*, 142, 434-447.
58. Griffies*, S.M. and co-authors (2014), "An assessment of global and regional sea level for years 1993-2007 in a suite of interannual CORE-II simulations," *Ocean Modell.*, 78, 35-89.
59. Shen, M.L., **Tseng***, **Y.H.**, Jan, S., Young, C.C. and Chiou, M.D. (2014), "Long-term variability of the Kuroshio transport east of Taiwan and the climate it conveys," *Prog. Oceanogr.*, 121, 60-73.
60. **Tseng***, **Y.H.**, Shen, M.L., Jan, S., Dietrich, D.E. and Chiang, C.P. (2012), "Validation of the Kuroshio current system in the dual-domain Pacific Ocean model framework," *Prog. Oceanogr.*, 105, 102-124. NSC9882628M002001
61. Young, C.C., **Tseng***, **Y.H.**, Shen, M.L., Liang, Y.C., Chien, M.H. and Chien, C.H. (2012), "Software development of the Taiwan Multi-scale Community Ocean Model (TIMCOM)," *Environ. Modell. Softw.*, 38, 214-219.
62. Tsai, Y.M., Kuo*, H.C., Chang, Y.C. and **Tseng, Y.H.** (2012), "A new parallel domain-decomposed Chebyshev collocation method for atmospheric and oceanic modeling," *Terr. Atmos. Ocean. Sci.*, 23, 439-450.
63. **Tseng***, **Y.-H.**, Chien, S.H., Jin, J. and Miller, N.L. (2012), "Modeling air-land-sea interactions using the Integrated Regional Model System in Monterey Bay, California," *Mon. Weather Rev.*, 140, 1285-1306.
64. Tu*, C. Y., **Tseng, Y.H.**, Chiu, T. S., Shen, M. L. and Hsieh, C. H. (2012), "Using coupled fish behavior-hydrodynamic model to investigate spawning migration of Japanese anchovy, *Engraulis japonicas*, from East China Sea to Taiwan," *Fish. Oceanogr.*, 21, 255-268.

65. Han*, Y.-S., Zhang, H., **Tseng, Y.H.** and Shen, M.L. (2012), "Larval Japanese eel (*Anguilla japonica*) as sub-surface current bio-tracers on the East Asia continental shelf", *Fish. Oceanogr.*, 21, 281-290.
66. Tzeng, W.-N., **Tseng*, Y.H.**, Han, Y.-S., Hsu, C.-C., Chang, C.-W., Di Lorenzo, E., Hsieh*, C.-H. (2012), "Evaluation of multi-scale climate effects on annual recruitment levels of the Japanese Eel, *Anguilla japonica*, to Taiwan," *PLoS One*, 7: e30805.
67. Tay, W.-B., **Tseng*, Y.H.**, Lin, L.-Y. and Tseng, W.-Y. (2011), "Toward patient-specific cardiovascular modeling system using the immersed boundary technique," *Biomed. Eng. OnLine*, 10:52 doi:10.1186/1475-925X-10-52.
68. **Tseng*, Y.H.** and Chien, M.-H. (2011), "Parallel domain-decomposed Taiwan Multi-scale Community Ocean Model (PD-TIMCOM)," *Comput. Fluids*, 45, 77-83.
69. Shen, M.-L., **Tseng*, Y.H.**, and Jan, S. (2011), "The formation and dynamics of the cold-dome off northeastern Taiwan," *J. Marine Syst.*, 86, 10-27.
70. Jiang*, L., Yan, X.-H., **Tseng, Y.H.** and Breaker, L. (2011), "A numerical study on the role of wind forcing, bottom topography, and nonhydrostasy in coastal upwelling," *Estuar. Coast. Shelf Sci.*, 95, 99-109, doi:10.1016/j.ecss.2011.08.019
71. **Tseng*, Y. H.**, Breaker, L.C., and Emmy T.-Y. Chang (2010), "Sea level variations in the regional seas around Taiwan", *J. Oceanogr.*, 66, 27-39.
72. **Tseng*, Y. H.**, Jan, S., Dietrich, D.E., Lin, I.-I., Chang, Y.T. and Tang, T.Y. (2010), "Modeled oceanic response and sea surface cooling to typhoon Kai-Tak," *Terr. Atmos. Ocean. Sci.*, 21, 85-98.
73. Jan*, S., **Tseng, Y.H.**, and Dietrich, D.E. (2010), "Sources of water in the Taiwan Strait," *J. Oceanogr.*, 66, 211-221.
74. Hu, C.K., Chiu, C.T., Chen, S.H., Jan*, S. and **Tseng, Y.H.** (2010), "Numerical simulation of barotropic tides around Taiwan," *Terr. Atmos. Ocean. Sci.*, 21, 71-84.
75. Breaker*, L., **Tseng, Y.H.** and Wang, X.C. (2010), "On the natural oscillations of Monterey Bay: observations, modeling, and origins," *Prog. Oceanogr.*, 86, 380-395.
76. Chen*, C.T.A., Jan, S., Huang, T.-S., Wang, B.-J. and **Tseng, Y.H.** (2010), "Spring of no Kuroshio intrusion in the southern Taiwan Strait," *J. Geophys. Res.*, 115, C08011, doi:10.1029/2009JC005804.
77. **Tseng*, Y.H.** (2008), "High-order Essentially Local Extremum Diminishing schemes for environmental flows," *Int. J. Numer. Methods Fluids*, 58, 213-235.
78. **Tseng*, Y.H.** and Ding, C.H.Q. (2008), "Efficient parallel I/O in Community Atmosphere Model (CAM)", *Int. J. High Perform. Comput. Appl.*, 22, 206-218.
79. Dietrich, D.E., **Tseng*, Y.H.**, Medina, R., Liste, M., Olabarriet, M., Piacsek, S.A., Bowman, M.J. and Mehra, A. (2008), "Mediterranean overflow water (MOW) simulation using a

- coupled multiple-grid Mediterranean Sea/North Atlantic Ocean model,” *J. Geophys. Res.*, 113, C07027, doi:10.1029/2006JC003914
80. Du*, T., **Tseng, Y.H.** and Yan, X.H. (2008), “The impacts of tidal currents and Kuroshio intrusion on the generation of nonlinear internal waves in Luzon Strait,” *J. Geophys. Res.*, 113, C08015.
 81. **Tseng***, **Y.H.**, and Breaker, L.C. (2007), “Nonhydrostatic simulation of the regional circulation in the Monterey Bay area,” *J. Geophys. Res.*, 112, C12017, doi:10.1029/2007JC004093
 82. Gao, T., **Tseng, Y.H.** and Lu*, X.Y. (2007), “An improved hybrid Cartesian/immersed boundary method for fluid-solid flows,” *Int. J. Numer. Methods Fluids*, 55, 1189-1211.
 83. **Tseng***, **Y.H.**, and Dietrich, D.E. (2006), “Entrainment and transport in the three-dimensional idealized gravity current simulation,” *J. Atmos. Oceanic Technol.*, 23, 1249-1269.
 84. **Tseng, Y.H.**, Meneveau, C. and Parlange*, M.B. (2006), “Modeling flow around bluff bodies and predicting urban dispersion using large eddy simulation,” *Environ. Sci. Technol.*, 40, 2653-2662.
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- 1 曾于恒、邵允銓、曾喜絃、陳建河 (2020), “第二章 寒害漁損預警與海氣耦合預報系統”

- 2 王胄、陳慶生、詹森、黃千芬、曾于恆、郭家榆、郭天俠(2018), “臺灣區域海洋學(二版) 第四章 海洋物理環境” (2020 科技部最具影響力研究專書)
- 3 李明安、劉康克、吳朝榮、曾于恆、楊智傑、陳鎮東、雷漢杰、陳明德、郭怡君 (2017), “臺灣氣候變遷科學報告 2014, 第二章 海洋系統與變遷”
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- 5 Young, C. C., Tseng, Y. H., Shen, M. L., Liang, Y. C., Chien, M. H. and Chien, C. H. (2012) Taiwan Multi-scale Community Ocean Model (TIMCOM) User's Manual
- 6 Tseng, Y. H. (2009), “Book review: The dynamics of Coastal Models,” *Oceanography*, Vol. 22, pp.241-243.
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Proceedings and conference full papers

1. **Tseng Y.H.**, Shao, Y.C., Hsieh, M.E., Chen, J.H. (2020), “Incorporating global air-sea coupled system to a high resolution regional ocean model for long-range forecast in the vicinity of Taiwan”, 2020 Conference on Weather Analysis and Forecasting, Taipei, A2-40 (Invited).
2. **Tseng, Y.H.** and H.C. Chen (2018), Pacific climate variability and the ENSO prediction, the 2018 Conference on Weather Analysis and Forecasting, Taipei, A4-4 (Invited).
3. 曾于恆, 邵允銓, 陳建河, 郭怡君 (2018), 全球海氣耦合數值預報模式對中長期天氣預報結果的改善 -以馬登-朱利安震盪為例, 107 年天氣分析與預報研討會, 台北, A3-6.
4. 楊智傑, 曾于恆, 余文彥, 陳進益 (2014), 海平面觀測資料之自動檢校與初步分析, 103 年天氣分析與預報研討會, 台北, A8-19.
5. Chen, H.C., Sui, C.H., and **Tseng, Y.H.** (2013), “An analysis of climate oscillations in Pacific Subtropical cells,” The 17th PAMS Meeting, April 23-25, Hangzhou, China.
6. Chow, C.H., **Tseng, Y.H.**, Hsu, H.H., and Young, C.C. (2013), “The interannual variability of the Subtropical Countercurrent's eddies in the North Pacific associated with the Western-Pacific teleconnection pattern,” The 17th PAMS Meeting, April 23-25, Hangzhou, China.
7. Griffies*, S.M. and co-authors (2013), “An assessment of global and regional sea level in a

- suite of interannual CORE-II simulations: a synopsis,” *CLIVAR Exchanges*, 62, 11-15.
8. Tseng, Y.H. and Chien, M.H. (2010), “Parallel domain-decomposed Taiwan Multi-scale Community Ocean Model (PD-TIMCOM)”, The 17th Computational Fluid Dynamics Conference in Taiwan, Jul. 29-31, Longtan, Taiwan (**Invited**).
 9. Chien, M.H. and **Tseng, Y.H.** (2010), “An efficient parallel domain-decomposed marching solver for pressure equation in the Ocean General Circulation Model”, The 17th Computational Fluid Dynamics Conference in Taiwan, Jul. 29-31, Longtan, Taiwan.
 10. **Tseng, Y.H.**, Chien, M.H. and Tay, W.B. (2010), “The development of parallel domain-decomposed Taiwan Multi-scale Community Ocean Model (PD-TIMCOM)”, The 22nd International Conference on Parallel Computational Fluid Dynamics, May 17-21, Kaohsiung, Taiwan (**Invited**).
 11. Tsai, Y.M., **Tseng, Y.H.** and Kuo, H.C. (2010), “A new parallel domain-decomposed Chebyshev collocation method for atmospheric modeling”, The 22nd International Conference on Parallel Computational Fluid Dynamics, May 17-21, 2010, Kaohsiung, Taiwan.
 12. Tay, W.B., Lin, L.Y., Tseng, W.Y., and **Tseng, Y.H.** (2009), “Development of the patient-specific cardiovascular modeling system using immersed boundary technique,” ISCM II and EPMESC XII, Proceedings of the 2nd International Symposium on Computational Mechanics and the 12th International conference on the Enhancement and Promotion of Computational Methods in Engineering and Science, November 30-December 3, Hong-Kong and Macao, Paper No. 274.
 13. Yuan, M.C., Huang, C.K., Wang, C.W., Chen, C.F., **Tseng, Y.H.** and Jan, S. (2009), “The uncertainty analyses of underwater detection off northeastern Taiwan,” 第十一屆水下技術研討會,基隆
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 15. Tu, C.Y., **Tseng, Y.H.**, Hsieh, C.H. and Chiu, T.S. (2009), “Validation of Japanese anchovy (*Engraulis japonicus*) population model in East China Sea: An application of ocean circulation model in biological studies,” The 15th PAMS Meeting, April 23-25, Busan, Korea.
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 17. Jan, S., **Tseng, Y.H.**, Hu, C.K., Chiu, C.T., Chen, S.H. (2008), “Development of Taiwan’s community ocean model,” Proceedings of Weather Analysis and Forecasting, Central Weather Bureau, Taipei, pp 511-514.

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21. **Tseng, Y.H.** and Ferziger, J.H. (2003), "LES of 3-D turbulent wavy boundary flow: Validation of a ghost-cell immersed boundary," The Proceeding of the 3rd International Symposium of Turbulence and Shear Flow Phenomena, Japan, June 25-27, 2003.
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Non-refereed papers

1. 曾于恆 (2008), **IPCC** 第一工作分組之第四次評估報告：科學基礎 第四章“觀察：雪、冰及凍土層的改變”，全球變遷通訊, Vol. 55, pp.10-11.
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Selected abstracts

1. **Tseng, Y.H.**, Huang, J.H., Chen, H.-C. (2022) "Improving the predictability of two types of ENSO by the characteristics of extratropical precursors", 2022 Ocean Science Meeting, February 24-March 4, Virtual.
2. **Tseng, Y.H.** and Lin, Ting-en (2021), "Linkages between Victoria Mode and tropical ocean heat content on ENSO evolution", The 18th Annual Meeting Asia Oceania Geosciences Society, August 1-6, Virtual.
3. Kuo, Y.-C., **Tseng, Y.H.** (2020), "The impact of ENSO to the South China Sea during ENSO decaying winter-spring using a regional coupled model," 2020 Ocean Science Meeting, February 16-21, San Diego, U.S.A.
4. **Tseng, Y.H.**, Chen, H.-C., Hu, Z.-Z., Ding, R. (2019) "Enhancing the ENSO predictability beyond the spring barrier," 2019 AGU Fall Meeting, December 9-13, San Francisco, U.S.A

5. **Tseng, Y.H.**, Ding, R., Zhao, S. and Kuo, Y.C. (2018), “Could the North Pacific Oscillation modified by the initiation of east Asian winter monsoon?” The 15th Annual Meeting Asia Oceania Geosciences Society, June 3-8, Honolulu, USA
6. Sun, Q., **Tseng, Y.H.**, Whitney, M.W., Bryan, F. (2017), “Improving the representation of estuarine processes in Earth System Models,” the 19th Pacific Asian Marginal Seas Meeting, April 11-13, Jeju, Korea.
7. **Tseng, Y. H.**, Chow, C.-H., Ding, R., Li, J. (2016), “Modulating the Pacific climate variability and ENSO from the Pacific Asian marginal seas,” CLIVAR Open Science Conference, September 18-25, Qingdao, China.
8. **Tseng, Y. H.**, Chow, C.-H., Ding, R. (2016), “Impacts of Pacific Asian marginal seas on North Pacific climate variability,” The 13th Annual Meeting AOGS, July 31-August 5, Beijing, China.
9. **Tseng, Y. H.**, Jin, X.L., Chow, C.H., Ding, R., Di Lorenzo, E., Small, J., Huang, X.M. (2016), “Impacts of Ocean-Atmosphere Interaction in the Pacific Asian Marginal Seas on the Variability of the North Pacific Oscillation/Victoria Mode,” 2016 Ocean Science Meeting, February 21-26, New Orleans, Louisiana, U.S.A.
10. **Tseng, Y. H.**, Chow, C.H., Ding, R., Li, J. and Hsu, H.H. (2015), “The role of Pacific Asian Marginal Seas on North Pacific climate variability and ENSO,” The 18th PAMS Meeting, April 21-23, Naha, Japan.
11. **Tseng, Y. H.** and Bryan, F.O. (2014), “The effects of river and estuary runoff parameterization in the Community Earth System Model”, 2014 Ocean Science Meeting, February 23-28, Honolulu, Hawaii, U.S.A.
12. Shen, M. L., **Tseng, Y. H.**, Jan, S. and Young, C. C. (2012), “Long-term variability of the Kuroshio transport east of Taiwan and the climate it conveys”, 2012 Ocean Science Meeting, February 20-24, Salt Lake City, U.S.A.
13. Tu, C.Y., **Tseng, Y. H.**, C. H. Hsieh, and T. S. Chiu (2011) “Using coupled fish behavior-hydrodynamic model to investigate spawning migration of Japanese anchovy, *Engraulis japonicus*, from Taiwan to the East China Sea”, PICES 2011 Annual Meeting, Abstract S8-7892, October 14-23, Khabarovsk, Russia.
14. **Tseng, Y. H.** and M. H, Chien (2011), “Parallel Domain-decomposed Taiwan Multi-scale Community Ocean Model (PD-TIMCOM),” Ocean, Atmosphere and the Changing Pacific, June 5-9, Victoria, British Columbia.
15. **Tseng, Y. H.** and M. H., Chien (2011), “Parallel Domain-decomposed Taiwan Multi-scale Community Ocean Model (PD-TIMCOM),” The 18th Conference on Atmospheric and Oceanic Fluid Dynamics, June 13-17, Spokane, WA.

16. Shen, M. L., **Y. H., Tseng**, S., Jan, C. C., Young, and M. D., Chiou (2011), "Long-term variability of the Kuroshio transport east of Taiwan and the climate it conveys," The 18th Conference on Atmospheric and Oceanic Fluid Dynamics, June 13-17, Spokane, WA.
17. **Tseng, Y. H. (2010)**, "Low-frequency climate responses of ENSO and solar modulation on the Western North Pacific fish recruitment" WGOMD/CLIVAR GSOP Workshop on Decadal Variability, Predictability and Prediction: Understanding the Role of the Ocean, Sep. 20-23, Boulder, U.S.A.
18. Lai, C.C. and **Tseng, Y. H. (2010)**, "Dominant role of Clathrates in the distributions of AOU, pH and Nutrients in seawater", *Eos Trans. AGU*, 91(26), West. Pac. Geophys. Meet. Suppl., Abstract OS31C-206.
19. Shen, M.L., **Tseng, Y. H.** and Jan, S. (2010), "The formation mechanisms of cold-dome northeast of Taiwan", *Eos Trans. AGU*, 91(26), West. Pac. Geophys. Meet. Suppl., Abstract OS21A-179.
20. Chueh, P.Y., **Tseng, Y. H.** and Lai, C.C. (2010), "Exploration of orbital scheme in the prediction of glacial cycles and the saw-tooth patterns", *Eos Trans. AGU*, 91(26), West. Pac. Geophys. Meet. Suppl., Abstract GC23C-033.
21. Chien, S.H., **Tseng, Y. H.**, Jin, J.M. and Miller, N. (2010), "Modeling air-land-sea interaction in Monterey Bay area using an integrated regional climate system model", *Eos Trans. AGU*, 91(26), West. Pac. Geophys. Meet. Suppl., Abstract A23B-137.
22. Lin, Y., **Tseng, Y. H.**, Liew, P. and Hsieh, M. (2010), "The sea level variation around Taiwan and its connection with North Pacific climate", *Eos Trans. AGU*, 91(26), West. Pac. Geophys. Meet. Suppl., Abstract GC23C-031.
23. **Tseng, Y. H.**, Shen, M. L., Jan, S. and Dietrich, D.E. (2010), "Validation of the Kuroshio current system in the dual-domain Pacific Ocean Model framework", *Eos Trans. AGU*, 91(26), West. Pac. Geophys. Meet. Suppl., Abstract OS31B-192.
24. Dietrich, D. E., Bowman, M., **Tseng, Y. H.** and Jan, S. (2010), "Observed and modeled interacting jets and eddies in the North Pacific ocean", *Eos Trans. AGU*, 91(26), West. Pac. Geophys. Meet. Suppl., Abstract OS31B-193.
25. Tay, W.B., **Tseng, Y. H.**, Chien, N., Liang, Y.C. and Chien, M. H. (2010), "Update of the Taiwan Multi-scale Community Ocean Model (TIMCOM)", *Eos Trans. AGU*, 91(26), West. Pac. Geophys. Meet. Suppl., Abstract OS51A-168.
26. **Tseng, Y. H.**, L. C. Breaker, and E Chang (2009), "Sea Level Variation in the Regional Seas around Taiwan", *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract NH11A-1100, AGU Fall Meeting, December 14-18, San Francisco, U.S.A. (NSC, NTU)
27. S. Chien, and **Tseng, Y. H.** (2009), "Modeling Air-Land-Sea Interaction using Regional Climate System Model for Monterey Bay", *Eos Trans. AGU*, 90(52), Fall Meet. Suppl., Abstract A13J-0437, December 14-18, San Francisco, U.S.A. (NSC, NTU)

28. Tu, C.Y., **Tseng, Y. H.**, C. H. Hsieh, and T. S. Chiu (2009) “Use particle tracking simulation in hydrodynamic model to investigate spawning migration of Japanese anchovy *Engraulis japonicus* from the East China Sea to Taiwan”, PICES 2009 Annual Meeting, Abstract S3-5540, October 23-November 1, Jeju, Korea.
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30. W.-B. Tay, **Tseng, Y. H.**, and L.Y. Lin (2009), “Development of the patient-specific cardiovascular modeling system using immersed boundary technique”, Academy Colloquium, Immersed Boundary Methods: current status and future research directions, June 15-17, Amsterdam, The Netherlands.
31. **Tseng, Y. H.**, L. C. Breaker, and E Chang, “Sea Level Variation in the Regional Seas around Taiwan” EGU General Assembly, April 19-24, Vienna, Austria.
32. C. C. Lai, **Tseng, Y. H.**, and D. E. Dietrich (2009), “Precise time-window for the onset of glacial termination found”, EGU General Assembly, April 19-24, Vienna, Austria.
33. Lai, C. and **Tseng, Y. H.** (2008), “Effects of earth surface albedo on orbital forcing in quaternary glacial cycles”, *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract PP51A-1488, December 15-19, San Francisco, U.S.A.
34. **Tseng, Y. H.** (2008), “Trends of sea level rise in the regional seas around Taiwan”, 2008 Taiwan Climate Workshop, November 18, Taipei, Taiwan.
35. **Tseng, Y. H.**, Sen Jan, I-I Lin, Ya-ting Chang, T. Y. Tang (2008), “Development of multiple-grids, fully coupled numerical ocean modeling-an application of upper ocean responses to typhoons”, Weather Analysis and Forecasting Conference, September 9-11, Taipei, Taiwan.
36. Sen Jan, **Tseng, Y. H.**, Chih-Kai Hu, Chao-Tsung Chiu, and Shao-Hua Chen (2008), “Development of Taiwan’s community ocean model”, Weather Analysis and Forecasting Conference 2008, September 9-11, Taipei, Taiwan.
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38. Jan, S., **Tseng, Y. H.**, Dietrich, D. E. and Yang, Y. (2008), “The origin of the Taiwan Strait current,” 2008 Ocean Science Meeting, March 2-7, Orlando, Florida, U.S.A.
39. Dietrich, D. E., **Tseng, Y. H.**, Bowman, M. J., Piacsek, S. A., (2008), “Sensitivity of major ocean currents to parameterized internal waves”, 2008 Ocean Science Meeting, March 2-7, Orlando, Florida, U.S.A.

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41. **Tseng, Y.H.** (2007), "Statistical analysis of the interannual and decadal climate variability in Western Pacific", Workshop on the Climate Change Studies in East Asia and Taiwan, December 18, Taipei, Taiwan.
42. **Tseng., Y.H.** (2007), "On the development of multiple-grids, fully coupled numerical ocean modeling," International Workshop on Computational Hydrometeorology and Prof. H. L. Kuo's Memorial Symposium, Oct. 15-17, Hsinchu, Taiwan. **(Invited)**
43. **Tseng, Y. H.** (2007), "Efficient Parallel I/O in Community Atmosphere Model (CAM)", The 14th National Conference on Computational Fluid Dynamics, August 16-18, Nantou, Taiwan.
44. **Tseng, Y. H.** (2007), "On the Application of High-order Local Extremum Diminishing Schemes to Environmental Flows", The 14th National Conference on Computational Fluid Dynamics, August 16-18, Nantou, Taiwan.
45. **Tseng, Y. H.**, Jan, S., Yang, Y. Dietrich, D. E. and Chien, S. H. (2007), "Seasonal variability and dynamics of Kuroshio path and its intrusion into the Luzon and Taiwan Straits," The 16th Conference on Atmospheric and Oceanic Fluid Dynamics, June 25-29, Santa Fe, New Mexico.
46. **Tseng, Y. H.** (2006), "Non-hydrostatic Simulations of the Regional Circulation in the Monterey Bay Area", International Workshop on Marine Environmental & Ecosystem Modeling, November 30, Taipei, Taiwan.
47. **Tseng, Y. H.** and Dietrich, D. E. (2006), "The grid and viscosity convergence toward eddy-resolving ocean model in an idealized bottom density current problem," EOS Trans. American Geophysical Union, Vol. 87, No. 36, Ocean Sci. Meet. Suppl., abstract OS46F-02.
48. **Tseng, Y. H.** and Gao, T. (2005), "Accuracy assessment of inverse-distance weighted interpolation in the immersed boundary method," *Program of the 58rd Annual Meeting of the Division of Fluid Dynamics.*, Bulletin of the American Physical Society.
49. **Tseng, Y. H.** (2005), "Entrainment and transport in idealized three-dimensional gravity current simulation," EOS, Transactions, American Geophysical Union, Vol. 86, No. 52, Fall Meet. Suppl., Abstract OS23A-1536.
50. **Tseng, Y. H.**, Meneveau, C. and Parlange, M. B. (2004), "Tests of dynamic Lagrangian eddy viscosity models in large eddy simulations of flow over three-dimensional bluff bodies," The 57th Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society.
51. Dietrich, D. E., Lai, C. A., Bowman, M. J., Mehra, A., Richman, J. and **Tseng, Y. H.** (2004), "A model study of deep current interaction with the Gulf stream," EOS, Transactions,

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52. **Tseng, Y. H.**, Dietrich, D. E. and Ferziger, J. H. (2003), “Regional circulation of the Monterey Bay region- the effects of Monterey Canyon,” EOS, Transactions, American Geophysical Union, Vol. 84, No. 52, Ocean Science Meeting supplement, Abstract OS31C-10.
 53. **Tseng, Y. H.** and Ferziger, J. H. (2003), “High resolution numerical simulation of the Monterey Bay area,” Program of the 56th Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society.
 54. **Tseng, Y. H.** and Ferziger, J. H. (2002), “A ghost-cell immersed boundary method for flow in complex geometry,” Program of the 55th Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society.
 55. **Tseng, Y. H.**, Ferziger, J. H. and Paul A. Durbin (2001), “Using high-order immersed boundary methods in geophysical fluid dynamics,” Program of the 54th Annual Meeting of the Division of Fluid Dynamics., Bulletin of the American Physical Society, p. 82.
 56. **Tseng, Y. H.** and Ferziger, J. H. (2000), “Turbulent mixing in stratified flows: a new approach and length scale,” Supplement to EOS, Transactions, American Geophysical Union, Vol. 81, No. 48, p.F699.
 57. **Tseng, Y. H.** and Ferziger, J. H. (2000), “Turbulent mixing and available potential energy in stratified Flows,” Program of the 53rd Annual Meeting of the Division of Fluid Dynamics., Bulletin of the American Physical Society, p. 131.

Invited talks and lectures since 2007

- “Beauty of Fluid Dynamics: the last 30 years of Earth System Modelling Development”, Invited talk at the 10th TWSIAM Annual Meeting, Hsin-chu, Jul. 23-24, 2022.
- “Incorporating Global Air-Sea Coupled System to a High Resolution Regional Ocean Model for Long-Range Forecast in the vicinity of Taiwan”, Invited seminar at 2020 Conference on Weather Analysis and Forecasting, Taipei, Taiwan, Oct. 13-15, 2020. (**Keynote**)
- “Could the North Pacific Oscillation modified by the initiation of East Asian Winter Monsoon,” Yunnan University, Kunming, Sep. 26, 2019.
- “Pacific climate variability and the ENSO prediction”, Invited seminar at 2018 Conference on Weather Analysis and Forecasting, Taipei, Taiwan, Sep. 11-13, 2018. (**Keynote**)
- “Is El Niño coming again at the end of 2018? -An improved ENSO prediction implicated by a new Pacific climate paradigm”, Invited Seminar at Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, Aug. 7, 2018.
- “A new North Pacific climate paradigm and its implication on the ENSO prediction”, Invited seminar at Research Center for Environmental Changes, Academia Sinica, Apr. 25, 2018.

- “What you need to know about the climate models”, Invited seminar at Department of Applied Mathematics, National Chiao-Tung University, Apr. 17, 2018.
- “A new North Pacific climate paradigm and its implication on the 2015 El Niño and ENSO prediction”, Invited seminar at Department of Earth Sciences, National Taiwan Normal University, Dec. 5, 2017.
- “The updated North Pacific climate paradigm to enhance the future ENSO prediction”, Invited seminar at Institute of Hydrological and Oceanic Sciences, National Central University, Nov. 28, 2017.
- “The outlook of South China Sea ocean dynamics”, invited presentation at The 13th Working Group Meeting on the study of Tides and Sea Level Change and Their Impacts on Coastal Environment in the South China Sea, Jakarta, Nov. 15, 2017
- “An ENSO prediction approach based on ocean conditions and ocean-atmosphere coupling”, Invited Seminar at Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, Sep. 7, 2017.
- “High resolution modeling of the South China Sea circulation”, Invited talk at International Science Forum on the South China Sea, Taipei, Sep. 4-5, 2017.
- “The ocean circulation models and turbulence”, Intensive Lectures at UNESCO/IOC-ODC Seventh Training Course on Development of Coupled Regional Ocean Models, Qingdao, China, Jun. 12-23, 2017
- “Implication of a new North Pacific climate paradigm on the ENSO prediction and 2015 El Niño”, Seminar at Climate and Global Dynamics Laboratory, National Center for Atmospheric Research, May 17, 2016.
- “Linking Pacific Asian marginal seas with Pacific climate variability and its predictability”, Invited seminar at Institute of Oceanography, National Taiwan University, Mar. 25, 2016.
- “North and equatorial Pacific ocean circulation in the CORE-II hindcast simulations”, Invited seminar at Center for Earth System Science, Tsing-hua University, Beijing, Oct. 13, 2015.
- “Overview of a new North Pacific Climate Paradigm and the impact of Pacific Asian Marginal Seas”, Invited seminar at Scripps Institution of Oceanography, U.C. San Diego, Mar. 19, 2015.
- “Overview of a new North Pacific Climate Paradigm and the impact of Pacific Asian Marginal Seas”, Seminar at Climate and Global Dynamics Laboratory, National Center for Atmospheric Research, Oct. 7, 2014.
- “Development of a 1/16° Eddy-resolving Global Ocean Simulation within an Earth System Model Framework”, Invited Talk in Multi-scale Ocean Circulation System Workshop, Madeira, Portugal, Aug. 11, 2014.
- “The link between Pacific subtropical cell and tropical climate variability”, Invited seminar at Institute of Atmospheric Physics, Chinese Academy of Sciences, Aug. 5, 2014.

- “Overview of a new North Pacific Climate paradigm and the teleconnection of Indo-Pacific Warm Pool”, Invited seminar at Institute of Atmospheric Physics, Chinese Academy of Sciences, Aug. 12, 2013.
- “Parallel Domain-decomposed Taiwan multi-scale Community Ocean Model (PD-TIMCOM)”, Invited TIMS seminar on Atmospheric and Oceanic Fluid Dynamic, Taida Institute for Mathematical Sciences, May 27, 2011.
- “Parallel Domain-decomposed Taiwan multi-scale Community Ocean Model (PD-TIMCOM)”, Invited seminar at Department of Marine Environmental Informatics, National Taiwan Ocean University, May 26, 2011.
- “Parallel Domain-decomposed Taiwan multi-scale Community Ocean Model (PD-TIMCOM)”, Invited seminar at Center of Mathematical Modeling and Scientific Computing, National Chiao-Tung University, May 5, 2011.
- “From the world of fluid mechanics to global warming”, Invited seminar at Department of Mechanical Engineering, Chung Hua University, Dec. 21, 2010.
- “What supercomputers can and cannot do”, Invited seminar at Department of Electrical Engineering, National Taiwan University, Nov. 29, 2010.
- “From the world of fluid mechanics to global warming”, Invited seminar at Department of Mechanical Engineering, National Taiwan University, Dec. 3, 2010.
- “Development of Parallel domain-decomposed Taiwan Multi-scale Community Ocean Model (PD-TIMCOM)”, Invited seminar at Institute of Marine Geology and Chemistry, National Sun Yat-sen University, Oct. 27, 2010.
- “Parallel domain-decomposed Taiwan Multi-scale Community Ocean Model (PD-TIMCOM)”, Invited talk in The 17th Computational Fluid Dynamics Conference in Taiwan, Longtan, Taiwan, Jul. 29-31, 2010.
- “The development of parallel domain-decomposed Taiwan Multi-scale Community Ocean Model (PD-TIMCOM)”, Invited talk in The 22nd International Conference on Parallel Computational Fluid Dynamics, Kaohsiung, Taiwan, May 17-21, 2010.
- “Patient-specific cardiovascular modeling system using immersed boundary technique”, Invited seminar at Institute of Applied Mechanics, National Taiwan University, Dec. 28, 2009.
- “Modeled oceanic response and sea surface cooling to typhoon Kai-Tak”, Invited seminar at Institute of Oceanography, National Taiwan University, Dec. 24, 2009.
- “The Taiwan multi-scale Community Ocean Model (TIMCOM)”, Invited seminar at Department of Systems Engineering & Naval Architecture, National Taiwan Ocean University, Nov. 17, 2009.
- “Introduction of the three-dimensional Ocean Model”, Invited seminar at Department of Engineering Science and Ocean Engineering, National Taiwan University, Mar. 23, 2009.

- “On the development of multiple-grids, fully coupled numerical ocean modeling”, Invited seminar at Chung Cheng Institute of Technology, National Defense University, Jan. 10, 2009.
- “Trends of sea level rise in the regional seas around Taiwan”, 2008 Climate Change Workshop, Taipei, Nov. 18, 2008.
- “Trends of sea level rise in the regional seas around Taiwan”, Invited talk in 2008 Taiwan Climate Change Symposium, Central Weather Bureau, Aug. 25-26, 2008.
- “On the development of multiple-grids, fully coupled numerical ocean modeling system”, Invited seminar at Institute of Oceanography, National Taiwan University, Jan. 3, 2008
- “Statistical analysis of the interannual and decadal climate variability in Western Pacific”, Invited seminar in the Workshop on the Climate Change Studies, Dec. 18, 2007.
- “From fish swimming to global warming”, Invited seminar at Department of Applied Mathematics, National Chiao-Tung University, invited seminar, Nov. 13, 2007.
- “Using immersed boundary method in the turbulent boundary layer flows”, Invited seminar at Department of Mathematics, National Taiwan University, Nov. 5, 2007.
- “On the development of multiple-grids, fully coupled numerical ocean modeling”, Invited talk in the Computational Hydrometeorology and Prof. H. L. Kuo’s Memorial Symposium, Hsin-chu, Oct. 15-17, 2007.
- “From fish swimming to global warming”, Invited seminar at Institute of Hydrological and Oceanic Sciences, National Central University, Apr. 10, 2007.
- “From fish swimming to global warming”, Invited seminar at Research Center for Environmental Changes, Academic Sinica, Mar. 21, 2007.
- “From fish swimming to global warming”, Invited seminar at Institute of Marine Environmental Science and Technology, National Taiwan Normal University, Mar. 6, 2007.

GRANTS AND CONTRACTS

NSTC Grant# 111-2111-M-002-015 “第二代台灣地球系統模式之發展與建置--台灣地球系統模式新一代海洋模式整合與調教 The updated ocean component of TaiESM and its calibration” , 8/2022-7/2023, PI

111年「中央氣象局區域動力降尺度海氣耦合模式預報系統建置(2/3)」委外案

110年「中央氣象局區域動力降尺度海氣耦合模式預報系統建置(1/3)」委外案

CWB 110年度 Development of the Next-Generation Global Atmosphere-Ocean Coupled Forecast System at the Central Weather Bureau, co-PI

CWB 109年度 High-resolution Current and Sea Surface Temperature Prediction with a Global Atmosphere-Ocean Coupled Model, PI

MOST Grant# 108-2111-M-002 -006 -MY3 “整合台灣多尺度社區海洋模式於台灣地球系統模式中探討海洋中尺度渦漩變異 Integrating the TIMCOM into the TaiESM to investigate the impacts of meso-scale eddies” , 8/2019-7/2022, PI

MOST Grant# 107-2611-M-002-013-MY4 “發展全面偶合全球氣候系統模式改進年代際氣候預報 Improving the Decadal Climate Prediction using a New Fully-Coupled Global Climate System Model”, 8/2018-7/2022, PI

CWB 107年度「全球預報模式偶合海洋參數模組軟體建置」案, PI

CWB 106年度「全球預報模式偶合海洋參數模組軟體建置」案, PI

MOST Grant# 106-2111-M-002-001 “新一代全面偶合全球氣候系統模式發展及驗證 The Development and Validation of a New-generation, Fully-Coupled Global Climate System Model”, 5/2017-7/2018, PI

NASA “Investigating the Impact of Dust on Storm Development over North Africa and East Atlantic through Satellite Data, Coupled-Modeling, and Data Assimilation”, 10/2016-9/2019, Co-PI

NSF Grant# 1419306 “Collaborative Research EaSM-3: Quantifying Predictability Limits, Uncertainties, Mechanisms, and Regional Impacts of Pacific Decadal Climate Variability”, 9/2014 - 8/2017, Co-PI

DOE SciDAC DE-SC0006769 “Collaborative Project: Improving the Representation of Coastal and Estuarine Processes in Earth System Models”, 9/2011-9/2014, investigator

NSC Grant# 100-2811-M-002-140 “發展高解析度全球海洋模式探討全球溫鹽環流與海洋氣候之影響 Developing the High-resolution Global Ocean Model to Investigate the Impacts of Turbulent Abyssal Currents on the Global Thermohaline Circulation and Ocean Climate”, 8/2011-3/2012, PI

NSC Grant# 99-2628-M-002-010 “全球溫鹽環流動力研究與海洋氣候之影響 The expanded influence of turbulent abyssal currents on the global thermohaline circulation”, 8/2010-7/2011, PI

NSC Grant# 99-2811-M-002-107 “蘭陽河流域近千年來的環境變遷與人類活動--子計畫三：臺灣東北部區域近千年氣候系統特徵之模擬與驗證(3/3) Environmental change and human activity over the last 1000 years in the Lan-Yang river drainage system: ECHA1000(3/3)”, 8/2010-7/2011, PI

- NSC Grant# 98-2628-M-002-001 “多尺度全面耦合海氣地模式發展(3/3) The development of a fully-coupled modeling refinement through coastal processes integration (3/3)”, 8/2009-7/2010, PI
- NSC Grant# 98-2627-M-002-012 “蘭陽河流域近千年來的環境變遷與人類活動--子計畫三：臺灣東北部區域近千年氣候系統特徵之模擬與驗證(2/3) Environmental Change and Human Activity over the Last 1000 Years in the Lan-Yang River Drainage System: ECHA1000(2/3)”, 8/2009-7/2010, PI
- NSC Grant#98-2621-M-005-001 “台灣、東南亞河川流域及海洋之碳循環-從觀測到模擬--台灣、東南亞河川流域及海洋之碳循環-從觀測到模擬(I) Carbon cycles in Taiwan and the South China Sea basin – from monitoring to modeling (CarboTaiwan Prelude)” 8/2009-7/2010, Co-PI
- NSC Grant# 98-2621-M-002-001 “本地氣候變遷模式資料服務 Local Change Simulation and Global Change Research Services”, 1/2009-12/2009, Co-PI
- NSC Grant# 97-2627-M-002-024 “蘭陽河流域近千年來的環境變遷與人類活動--子計畫三：臺灣東北部區域近千年氣候系統特徵之模擬與驗證(1/3) Environmental Change and Human Activity over the Last 1000 Years in the Lan-Yang River Drainage System: ECHA1000(1/3)”, 8/2008-7/2009, PI
- NSC Grant# 97-2628-M-002-001 “多尺度全面耦合海氣地模式發展(2/3) The development of a fully-coupled modeling refinement through coastal processes integration (2/3)”, 8/2008-7/2009, PI
- NSC Grant# 97-2621-M-002-002 “本地氣候變遷模式資料服務 Local Change Simulation and Global Change Research Services”, 1/2008-12/2008, Co-PI
- NSC Grant# 96-2314-B-002-163 “心臟三維流場與心壁移動之交互作用-一個核磁共振之研究 Interaction between cardiac 3-dimensional velocimetry and wall motion-a MRI study”, 8/2007-7/2008, Co-PI
- NSC Grant#96-2628-M-002-010 “多尺度全面耦合海氣地模式發展(1/3) The development of a fully-coupled modeling refinement through coastal processes integration(1/3)”, 8/2007-7/2008, PI
- NSC Grant#96-2745-M-002-003 “長期氣候變遷之機制探討與模式驗證The mechanism causing the saw-tooth pattern of natural climate change”, 8/2007-7/2008, PI
- NSC Grant#95-2119-M-002-048 “北太平洋氣候變遷與區域性海氣交互作用之探討Global climate change and air-sea interaction in the North Pacific Ocean”, 10/2006-9/2007, PI
- NARL “多重解析度台灣海洋模式之發展 Development of a multi-scale Taiwan community ocean model (TaiCOM)”, 1/2008-12/2008, Co-PI
- CEPD “氣候變遷長期影響評估及因應策略研議委託辦理計畫”, 2/2008-2/2009, Co-PI

RESEARCH STAFFS:

- 8/2017- Dr. Yi-chun Kuo
- 12/2016- 邵允銓
- 9/2022- 謝今珮
- 11/2022- Danielle Manalaysay

FORMER RESEARCH STAFFS:

- 3/2012-7/2016 Dr. Chun hoe Chow (Present: National Taiwan Ocean University, Taipei, Taiwan)
- 8/2010-7/2012 Dr. Chih-chieh Young (Present: National Taiwan Ocean University, Taipei, Taiwan)
- 7/2009-8/2011 Dr. Mao-lin Shen (present: University of Bergen, Bergen, Norway)
- 12/2008-11/2009 Dr. Tay Wee Beng (present: Aeronautical Sciences, National University of Singapore)
- 1/2009-7/2009 Dr. Chia-Ping Chiang (present: Taiwan Semiconductor Manufacturing Company, Taiwan)
- 10/2007-02/2008 Dr. Dietrich E. Dietrich (AcuSea Inc.)
- 林冠廷 (1/2022-6/2022), 趙守恩 (5/2021-7/2022), 蔡佳穎 (8/2018-5/2021), 林佑宇 (12/2016-6/2018), 余文彥 (8/2009-7/2016), 許權元 (2/2007-5/2008), 蔡沛紋 (09/2007-04/2008), 許瑋婷 (09/2008-02/2009)

STUDENTS**Graduate students:**

- 邵允銓 (Ph. D student)
- Sieucuong San (Ph. D student)
- 黃偌栩 (Master student)
- 王怡雯 (Master student)

Undergraduate students:

- 江柏君

Graduated:

- Danielle Manalaysay (master, graduated Sep, 2022, thesis title: Simulation of Sediment Transport over Ripple using Two-Phase Euler Lagrange Model)
- 謝今珮 (master, graduated Jun, 2022, thesis title: Possible Oceanic Dynamics Affecting the Recruitment of the Japanese Eel, *Anguilla japonica*)

- 林冠廷 (master, graduated Dec, 2021, thesis title: Impacts of Ocean and Atmosphere Variabilities on Winter Temperature in Taiwan-Application in the Honeybee Production)
- 曾喜絃 (master, graduated Aug, 2021, thesis title: Impacts of Distinct Ocean-atmosphere Coupling Processes During the Winter Cold Surge in East Asia)
- 王紹穎 (master, graduated Aug, 2020, thesis title: Developing a weakly coupled data assimilation system within an air-sea-wave coupled model for typhoon prediction)
- 林廷恩 (master, graduated Aug, 2020, thesis title: The Linkages Between Victoria Mode and Tropical Ocean Heat Content on ENSO Evolution)
- 簡睦樺 (master, graduated June, 2012, thesis title: Investigating energy conversion in Kuroshio-Oyashio extension by ocean general circulation model)
- 馮培寧 (master, graduated Aug, 2012, thesis title: Modeling North Pacific decadal variations and their teleconnection patterns)
- 陳漢卿 (master, graduated June 2011, thesis title: Southern Hemisphere Extra-tropical Forcing on ENSO- Observation and Model Comparisons)
- 闕珮羽 (master, graduated June 2011, thesis title: The Influence of 11 year Solar Cycles on the North Pacific Clim. Dyn.)
- 王建勛 (master, graduated July, 2010, thesis title: Modeling ocean response to idealized typhoons)
- 簡碩宏 (master, graduated May, 2010, thesis title: Modeling air-land-sea interaction using Regional Climate System Model) 第十屆全國大氣科學研究生學術研討會特優獎
- 梁禹喬 (undergraduate, graduated June, 2010) 國科會 98 年度大專學生參與專題研究計畫研究創作獎

Interns:

- Herbert Hsu (Mechanical Engineering, U. Michigan), 7/2017
- Chris Tsai (Computer Science, California State University-East Bay), 12/2019-1/2020