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Last update: 2020/04/06

### EDUCATION

2003-Sep ~ 2010-Aug	Ph.D.	Institute of Oceanography, National Taiwan Uni., Taiwan
1996-Sep ~ 1998-Aug	M.S.	Institute of Oceanography, National Taiwan Uni., Taiwan
1992-Sep ~ 1996-Aug	B.S.	Department of Oceanography, National Taiwan Ocean Uni., Taiwan

### EMPLOYMENT

2014-Oct ~ present	Assistant Research Specialist	RCEC, Academia Sinica, Taiwan
2011-Jan ~ 2014-Oct	Post-Doctoral Researcher	RCEC, Academia Sinica, Taiwan
2010-Aug ~ 2010-Dec	Post-Doctoral Researcher	National Taiwan Uni., Taiwan

### ACADEMIC SERVICE & RESEARCH PROJECTS

#### RESEARCH INTERESTS

Mooring system and data analysis, flow pattern and hydrographic structure

#### RESEARCH HIGHLIGHTS

- **Mooring system and data analysis:** I am expert in developing/deploying mooring system for long-term hydrographic parameters' observations (technical reports: 1, 2, 4, 5), data analysis and their interpretation in a view of physical oceanography. These efforts support RCEC colleagues and oceanographic community for their studies, including 1) biogeochemical variations in South China Sea (peer-reviewed papers: 5, 6, 7, 8, 12, 13, and 14) and 2) phytoplankton bloom in the oligotrophic North Pacific Gyre (peer-reviewed papers: 10, and 15).
- **Flow pattern and hydrographic structure:** I am also interested in study the flow pattern and vertical hydrographic structures of the upper ocean around Taiwan. The findings include: 1. the Kuroshio migrated both seasonal and intra-seasonally and the flow pattern north of Taiwan was impacted by the migration of Kuroshio (peer-reviewed paper: 1); 2. the intra-seasonal variation (5-day) of current velocity in Luzon Strait is caused by Kuroshio frontal instability, and ridge topography and stratification play an important role (peer-reviewed paper: 4); 3. the subtidal current on continental shelf and slope of northern South China Sea was affected by wind strength, fresh water inputs, typhoon, and eddies (peer-reviewed paper: 9); and 4. the hydrographic structure in the northern South China Sea (SEATS station) has three principal types and fixed

temperature difference method of 0.5 and 0.8°C from the 10-m temperature may be a best estimator for determining mixed layer depth (peer-reviewed paper: 11)

## **PUBLICATIONS** (\*: corresponding author)

### **Manuscripts (in preparation/to be finished):**

[16]. Effect of an extreme rainfall event (“Rain Bomb”) on coastal circulation and hydrography. (in preparation)

### **Peer-reviewed papers:**

- [22]. Shiah, Fuh-Kwo, Lai, Chao-Chen, Chen, Tzong-Yueh, Ko, Chia-Ying, **Tai, Jen-Hua** and Chang, Chun-Wei, 2022, “Viral shunt in tropical oligotrophic ocean”, *Science Advances*, 8, eabo2829. (SCI) (IF: 14.980; SCI ranking: 9.4%)
- [21]. Chow, Chun-Hoe, Lin, Yi-Chen, Cheah, Wee and **Tai, Jen-Hua**, 2022, “Injection of high Chlorophyll-a waters by a branch of Kuroshio Current into the Nutrient-Poor North Pacific Subtropical Gyre”, *Remote Sensing*, 14, 1531. (SCI) (IF:5.349; SCI ranking: 21.4%)
- [20]. Chen, Tzong-Yuh, Lai, Chao-Chen, **Tai, Jen-Hua**, Ko, Chia-Ying and Shiah, Fuh-Kwo, 2021, “Diel to seasonal variation of Picoplankton in the tropical South China Sea”, *Frontiers in Marine Science*, 8:732017. (SCI) (IF:5.247; SCI ranking: 5.3%)
- [19]. Shih, Yung-Yen, Shiah, Fuh-Kwo, Lai, Chao-Chen, Chou, Wen-Chen, **Tai, Jen-Hua**, Wu, Yu-Shun, Lai, Chen-Yang, Ko, Chia-Ying and Hung, Chin-Chang, 2021, “Comparison of primary production using in situ and satellite-derived values at the SEATS station in the South China Sea”, *Frontiers in Marine Science*, 8:747763. (SCI) (IF:5.247; SCI ranking: 5.3%)
- [18]. Lai, Chao-Chen, Wu, Chau-Ron, Chuang, Chia Ying, **Tai, Jen-Hua**, Lee, Kuo-Yuen, Kuo, Hsiang-Yi and Shiah, Fuh-Kwo, 2021, “Phytoplankton and Bacterial Responses to Monsoon-Driven water masses mixing in the Kuroshio off the East Coast of Taiwan”, *Frontiers in Marine Science*, 8:707807. (SCI) (IF:5.247; SCI ranking: 5.3%)
- [17]. **Tai, Jen-Hua**, Chou, Wen-Chen, Chin-Chang Hung, Wu, Kuan-Chieh, Chen, Ying-Hsuan, Chen, Tzong-Yueh, Gong, Gwo-Ching, Shiah, Fuh-Kwo and Chow, Chun Hoe, 2020, “Short-term variability of biological production and CO<sub>2</sub> system around Dongsha Atoll of the northern South China Sea: impact of topography-flow interaction, *Frontiers in Marine Science*, 7:511. (SCI) (IF:5.247; SCI ranking: 5.3%)
- [16]. Cheng, Yu-Hsin, Chang, Ming-Huei, Ko, Dong S, Jan, Sen, Andres, Magdalena, Kirincich, Anthony, Yang, Yiing Jang and **Tai, Jen-Hua**, “Submesoscale eddy and frontal instabilities in the Kuroshio interacting with a cape south of Taiwan, *Journal of Geophysical Research: Oceans*, 124, e2020JC016123. (SCI) (IF: 3.938; SCI ranking: 13.2%)
- [15]. Chow, Chun Hoe, Cheah, Wee, **Tai, Jen-Hua**, and Liu, Sin-Fu, 2019, “Anomalous wind triggered the largest phytoplankton bloom in the oligotrophic North Pacific Subtropical Gyre”, *Scientific Reports*, 9(1):15550. (SCI) (IF: 4.997; SCI ranking: 25.6%)

- [14]. Pan, Xiaoju, Wong, George T. F., Ho, Tung-Yuen, and **Tai, Jen-Hua**, 2019, “Diel variability of vertical distributions of chlorophyll a at the SEATS and ALOHA stations: implications on remote sensing interpretations”, *International Journal of Remote Sensing*, 40(8), 2916-2935. (SCI) (IF:3.531; SCI ranking: 52.9%)
- [13]. Pan, Xiaoju, Wong, George T. F., Ho, Tung-Yuen, **Tai, Jen-Hua**, Liu, Hongbin, Liu, Juanjuan, and Shiah, Fuh-Kwo, 2018, “Remote sensing of surface [nitrite+nitrate] in river-influenced shelf-seas: the northern South China Sea Shelf-seas”, *Remote Sensing of Environment*, 210, 1-11. (SCI) (IF:13.850; SCI ranking: 3.5%)
- [12]. Austria, Eleanor, Lai, Chao-Chen, Ko, Chia-Ying, Lee, Kuo-Yuan, Kuo, Hsiang-Yi, Chen, Tzong-Yueh, **Tai, Jen-Hua**, and Shiah, Fuh-Kwo, 2018, “Growth-controlling mechanisms on heterotrophic bacteria in the South China Sea shelf: summer and winter patterns”, *Terrestrial Atmospheric Oceanic Sciences*, 29(4), 1-13. (SCI) (IF: 0.963; SCI ranking: 83.3%)
- [11]. **Tai, Jen-Hua**, Wong, George T. F., and Pan, Xiaoju, 2017, “Upper water structure and mixed layer depth in tropic waters: the SEATS station in the northern South China Sea”, *Terrestrial Atmospheric Oceanic Sciences*, 28(6), 1019-1032. (SCI) (IF: 0.963; SCI ranking: 83.3%)
- [10]. Chow, Chun Hoe, Cheah, Wee, and **Tai, Jen-Hua**, 2017, “A rare and large summer bloom in the oligotrophic western North Pacific Subtropical Gyre”, *Scientific Reports*, 7(1):6199. (SCI) (IF:4.997; SCI ranking: 25.6%)
- [9]. **Tai, Jen-Hua**, Yang, Kai-Chieh, and Gawarkiewicz, Glen, 2017, “Subtidal current structure and variability of the continental shelf and slope of the northern South China Sea”, *Terrestrial Atmospheric Oceanic Sciences*, 28(3), 421-433. (SCI) (IF: 0.963; SCI ranking: 83.3%)
- [8]. Pan, Xiaoju, Wong, George T. G., DeCarlo, Tomas M., Tai, Jen-Hua, Cohen, and Anne L., 2017, “Validation of the remotely sensed nighttime sea surface temperature in the shallow water at the Dongsha Atoll”, *Terrestrial Atmospheric Oceanic Sciences*, 28(3), 527-534. (SCI) (IF:0.963; SCI ranking: 83.3%)
- [7]. Chen, Tzong-Yueh, **Tai, Jen-Hua**, Ko, Chia-Ying, Hsieh, Chih-Hao, Chen, Chung-Chi, Jiao, Nianzhi, Liu, Hong-Bin, and Shiah, Fuh-Kwo, 2016, “Nutrient pulses driven by internal solitary waves enhance heterotrophic bacterial growth in the South China Sea”, *Environmental Microbiology*, 18(2), 4312-4323. (SCI) (IF:5.473; SCI ranking: 24.2%)
- [6]. Pan, Xiaoju, Wong, George T. F., **Tai, Jen-Hua**, and Ho, Tung Yuan, 2015, “Climatology of the oceanography of the northern South China Sea Shelf-sea (NoSoCS) and adjacent waters: Observations from satellite remote sensing”, *Deep-Sea Research Part II*, 117, 10-22. (SCI) (IF:2.887; SCI ranking: 36.3%)
- [5]. Lai, C.-C., Fu, Y.-W., Liu, H.-B., Kuo, H.-Y., Wang, K.-W., Lin, C.-H., **Tai, Jen-Hua**, Wong, G.T.F, Lee, K.-Y., Chen, T.-Y., Yamamoto, Y., Chow, M.-F., Kobayashi, Ko, C.-Y. and Shiah, F.-K., 2014, Distinct bacterial-production-DOC-primary-production relationships and

implications for biogenic C cycling in the South China Sea shelf”, *Biogeosciences*, 11, 147-156. (SCI) (IF:5.092; SCI ranking: 16.8%)

- [4]. **Tai, Jen-Hua**, Tang, Tswen Yung, and Gawarkiewicz, Glen, 2010, “Instability of the Kuroshio in Luzon Strait: Effects of Ridge Topography and Stratification”, *Journal of Oceanography*, 66, 523-538. (SCI) (IF: 2.000; SCI ranking: 63.6%)
- [3]. Chang, Ya-Ting, Hsu, Wei-Lun, **Tai, Jen-Hua**, Tang, Tswen Yung, Chang, Ming-Huei, and Chao, Shenn-Yu, 2010, “The cold deep water in the South China Sea”, *Journal of Oceanography*, 66, 183-190. (SCI) (IF: 2.000; SCI ranking: 63.6%)
- [2]. Wei, Ching-Ling, Tsai, Jing-Ru, Wen, Liang-Saw, Pai, Su-Cheng, and **Tai, Jen-Hua**, 2009, “Nearshore scavenging phenomenon elucidated by  $^{234}\text{Th}/^{238}\text{U}$  Disequilibrium in the coastal waters off western Taiwan”, *Journal of Oceanography*, 65, 137-150. (SCI) (IF:2.000; SCI ranking: 63.6%)
- [1]. Tang, Tswen Yung, **Tai, Jen-Hua**, and Yang, Yiing Jang, 2000, “The flow pattern north of Taiwan and migration of the Kuroshio”, *Continental Shelf Research*, 20, 349-371. (SCI) (IF: 2.629; SCI ranking: 43.9%)

#### **Dissertation/Thesis:**

- Tai, Jen-Hua**, *Instability of the Kuroshio in Luzon Strait: Effects of Ridge Topography and Stratification*, 2010, Dissertation (Doctoral), Supervisor: Profs. Tswen-Yung Tang and Glen G. Gawarkiewicz.
- Tai, Jen-Hua**, *The flow pattern north of Taiwan and migration of the Kuroshio*, 1998, Thesis (Master), Supervisor: Prof. Tswen-Yung Tang.

#### **Technical/Data Reports and Book\_**

1. **Tai, Jen-Hua**, and Kuo-Yuen Lee (2016), Shallow water long-term observational mooring designation, *Technical Report*, Research Center for Environmental Changes, Academia Sinica.
2. **Tai, Jen-Hua**, and Kuo-Yuen Lee (2014), Shallow water short-term observational mooring designation, *Technical Report*, Research Center for Environmental Changes, Academia Sinica.
3. **Tai, Jen-Hua**. (2013) Lowered Acoustic Doppler Current Profiler (LADCP) Data Processing Using LDEO Software Package, *Technical Report*, Research Center for Environmental Changes, Academia Sinica.
4. **Tai, Jen-Hua** (2013), Design, deploy and retrieve an Oceanic Sub-Surface Thermistor Mooring at Northwest Dong-Sha Atoll, *Technical Report*, Research Center for Environmental Changes, Academia Sinica.
5. **Tai, Jen-Hua** (2012), Design, deploy and retrieve an Oceanic Surface buoy Nearby Dong-Sha Atoll: the first buoy of RCEC, *Technical Report*, Research Center for Environmental Changes, Academia Sinica.
6. Linder, C., **Jen-Hua Tai**, G. Gawarkiewicz and T.Y. Tang (2006) Taiwan Climatology Technical

Report, *Technical Report*, Woods Hole Oceanographic Institution.

7. **Tai, Jen-Hua** (2003), A software package for moored current velocity: Spectral Analysis and Plotting, *Technical Report*, Ocean Data Bank, National Center for Ocean Research. (in Chinese)
8. **Tai, Jen-Hua** (2003), The procedures of calibrating moored current velocity, *Technical Report*, Ocean Data bank, National Center for Ocean Research. (in Chinese)
9. **Tai, Jen-Hua** (2002), The web-based system designed for display current velocity and hydrographic data: by using Java language, *Technical Report*, Ocean Data Bank, National Center for Ocean Research. (in Chinese)
10. **Tai, Jen-Hua** (2001), The procedures on calibrating current velocity measured by ship-board Acoustic Doppler Current Profiler, *Technical Report*, Ocean Data Bank, National Center for Ocean Research. (in Chinese)
11. **Tai, Jen-Hua** (2001), The procedures on calibrating hydrographic data measured by Ship-board Conductivity-Temperature-Depth, *Technical Report*, Ocean Data Bank, National Center for Ocean Research. (in Chinese)
12. Tang, T. Y., Y. J. Yang, W.-S. Chuang, **Jen-Hua Tai**, H. S. Huang, and W.-D. Liang (1998), Environmental impact of thermal pollution of Miao-Li power plant, *Chinese Geoscience Union*. (In Chinese)
13. Tang, T. Y., Y. J. Yang, H. S. Huang, and **Jen-Hua Tai** (1998), Environmental impact of thermal pollution of Hua-Lian power plant, *Chinese Geoscience Union*. (In Chinese)
14. Tang, T. Y., W. S. Chuang, Y. J. Yang, S. F. Lin, S. J. Huang, **Jen-Hua Tai**, J. C. Jan, and Y. H. Wang (1997), Study on current northeast of Taiwan and feasibility study on the data bank establishment. *Report of Department of Transportation*, pp95. (In Chinese)

## OTHERS

### Seminar/Conference/Invited Talk/Keynote Speech (from 2010 ~ present):

1. 2016-Mar, “Shiah, Fuh-Kuo, Tzong-Yueh Chen, and **Jen-Hua Tai**: Internal-waves driven high bacterial activity in the South China Sea” *International Symposium on Oceanic and Atmospheric Research in the South China Sea*”, Taiwan.
2. 2014-Dec, “**Tai, Jen-Hua**, and George T. F. Wong: Upper water structure and mixed layer depth in tropic waters: the SEATS station in the northern South China Sea.”, *2014 AGU Fall Meeting*, San Francisco, California, United States of America.
3. 2014-Feb, “**Tai, Jen-Hua**, Kai-Chieh Yang, Glen Gawarkiewicz, and Tswen-Yung Tang: Subtidal current structure and variability of the continental shelf and slope of the northern South China Sea.”, 17<sup>th</sup> biennial Ocean Science Meeting, Honolulu, Hawaii, United States of America.
4. 2011-Dec, “Lin, Sheng-Fong, Hsiang-Chan Chih, Ying-Ying Fang, Chi-Fang Chen, and **Jen-Hua Tai**: Underwater Acoustic Propagation and Ambient Noise Simulations offshore Western Taiwan.”, *Proceedings of the 33<sup>rd</sup> Ocean Engineering Conference in Taiwan*, National Kaohsiung University, Kaohsiung, Taiwan.
5. 2010-Jun, “Liu, S.-Y., **Jen-Hua. Tai**, Y.T. Chang, Y. Yang, and T.Y. Tang: Long-term air-sea observation system in the northwestern Pacific Ocean: A case study on typhoon Molave.”,

*Proceedings CWB 2010 Weather Analysis and Forecasting and COAA 5<sup>th</sup> International Ocean-Atmosphere Joint Conference, Taipei.*