

Curriculum Vitae

Ruo-Shan Tseng



Department of Oceanography
National Sun Yat-sen University
70, Lien-Hai Road, Ku-Shan District
Kaohsiung, Taiwan 80424

Tel: 886-7-5252000#5033
Fax: 886-7-5255033
Email: rsteng@mail.nsysu.edu.tw

Education:

Ph. D.	University of Delaware, USA,	Physical Oceanography	June 1987
M. S.	National Taiwan University, Taiwan,	Physical Oceanography	June 1978
B.S.	National Cheng-Kung University, Taiwan,	Naval Architecture and Marine Engineering	June 1976

Employment:

2013-present:	Professor, Department of Oceanography, National Sun Yat-sen University, Taiwan
2004-2013:	Professor, Department of Marine Resources, National Sun Yat-sen University, Taiwan
1992-2004:	Associate Professor, Department of Marine Resources, National Sun Yat-sen University, Kaohsiung, Taiwan
1989-1991:	Research Associate, RSMAS, University of Miami, USA
1987-1989:	Post-doctor, Department of Aerospace Engineering, University of Southern California, USA
1983-1987:	Research Assistant, College of Marine Studies, University of Delaware, USA
1980-1983:	Associate Researcher, Energy Research Laboratories, Industrial Technology Research Institute, Taiwan

Research Interests:

- Turbulent mixing and diffusion of coastal waters from observations of microstructure dissipation, lowered ADCP, and vertical overturn
- Bottom boundary layer characteristics from observations of current profile, ADV, VMP
- Typhoon-induced strong near-surface currents and the momentum transfer across the air-water interface
- Lagrangian analysis of surface currents from drifter data and its applications to shipping navigation and ocean current energy assessment

Invited talks:

- Annual Meeting, Key Laboratory of Physical Oceanography at Ocean University of China, December 6th, 2014, Qingdao, China, speech topic: Observed near-surface currents under all tropical cyclone intensity levels using drifters in the northwestern Pacific.
- The SOLAS (Surface Ocean Lower Atmosphere Study) Open Science Conference, Kiel, Germany, 8th Sept., 2015, speech topic: Air-sea momentum transfer and near-surface currents under high winds and tropical cyclones.

Award, honour, and service:

- Guest Associate Editor, Journal of Geophysical Research (Oceans), 2013.9-2014.12
- Excellence Teaching Award for courses “Physical Oceanography” and “Ocean Expedition Practices”, National Sun Yat-sen University, 2012, 2013, 2015
- Associate Dean, College of Marine Science, National Sun Yat-sen University, 2010-2013
- Best student thesis, College of Marine Science, University of Delaware, 1987

List of Publications:

Refereed journal papers:

- Chang*, M.-H., Y.-H. Cheng, Y. J. Yang, S. Jan, S. R. Ramp, D. B. Reeder, W.-T. Hsieh, D. S. Ko, K. A. Davis, H.-J. Shao, and R.-S. Tseng, 2021, Instabilities and Turbulence Observed within Large Internal Solitary Waves. *Communications Earth & Environment*, 2:15, <https://doi.org/10.1038/s43247-020-00083-6>, |www.nature.com/commsenv.
- Tseng, R.-S.*, Jan, S. and Zhu, J., 2020, Circulation and Water Mass in the Taiwan Strait. *Regional Oceanography of the South China Sea and its Adjacent Areas* (ISBN: 9789811206900). World Scientific Press. Jan, 2020: p. 433-470.
- Shen, Y.-T., J.-W. Lai, L.-G. Leu, Y.-C. Lu, J.-M. Chen, H.-J. Shao, H.-W. Chen, K.-T. Chang, C.-T. Terng, Y.-C. Chang, R.-S. Tseng*, 2019, Applications of ocean currents data from high-frequency radars and current profilers to search and rescue missions around Taiwan. *Journal of Operational Oceanography*, 12, S2, s126–s136.
- Huang, T.-H., C.-T. A. Chen*, J. Lee, C.-R. Wu, Y.-L. Wang, Y. Bai, X. He, S.-L. Wang, S. Kandasamy, J.-Y. Lou, B.-J. Tsuang, H.-W. Chen, R.-S. Tseng & Y.-J. Yang, 2019, East China Sea increasingly gains limiting nutrient P from South China Sea. *Scientific Reports*, 9:5648.
- Shao, H.-J., R.-S. Tseng, R.-C. Lien, J.-M. Chen and Y.-C. Chang, 2018. Turbulent mixing on sloping bottom of an energetic tidal channel, *Continental Shelf Research*, 166, 44-53.
- Tseng, R.-S.*, Y.-C. Chang, and P. C. Chu., 2017, Use of global satellite altimeter and drifter data for ocean current resource characterization. *Marine Renewable*

Energy: Resource characterization and physical effects. ed. Z. Yang and A. Copping, Springer Press, Gewerbestrasse, Switzerland, 159-177. (ISBN: 978-3-319-53534-0). Gewerbestrasse, Switzerland: Springer Press.

- Chang, Y.-C., Tseng, R.-S., Chu, P.-C., Chen, J.-M., and Centurion, L.-R., 2016, Observed strong currents under global tropical cyclones, *Journal of Marine Systems* 159, 33–40.
- Chang, Y.-C., R.-S. Tseng, P. C. Chu, and H.-J. Shao, 2016, Global Energy-saving Map of Strong Ocean Currents, *Journal of Navigation*, 69, 75–92.
- Chang, Y.-C., P. C. Chu and R.-S. Tseng, 2015, Site selection of ocean current power generation from drifter measurements, *Renewable Energy*, 80, 737-745.
- Chang, Y.-C., P. C. Chu, L. R. Centurioni, R.-S. Tseng, 2014, Observed near-surface currents under four super typhoons, *Journal of Marine Systems*, 139, 311-319
- Chang, Y.-C., R.-S. Tseng*, G.-Y. Chen, P. C. Chu, and Y.-T. Shen, 2013, Ship routing utilizing strong ocean currents, *Journal of Navigation*, 66, 825 – 835.
- Chang, Y.-C., G.-Y. Chen, R.-S. Tseng, L. R. Centurioni, and P. C. Chu, 2013, Observed near-surface flows under all tropical cyclone intensity levels using drifters in the northwestern Pacific, *Journal of Geophysical Research*, 118, 1-11.
- Tseng, R.-S.*, H.-J. Shao, Y.-C. Chang and L. R. Centurioni, 2012, Turbulent mixing of the Kuroshio waters southeast of Taiwan, *Kuroshio Science*, 6-1, 27-34.
- Chang, Y.-C., G.-Y. Chen*, R.-S. Tseng, L. R. Centurioni, and Peter C. Chu, 2012, Observed near-surface currents under high wind speeds, *Journal of Geophysical Research*, 117, C11026, doi:10.1029/2012JC007996
- Chang, Y.-C., Chen, G.-Y.*, Tseng, R.-S., and P. C. Chu, 2012, Effect of cylindrically shaped atoll on westward-propagating anticyclonic eddy-a case study. *IEEE Geoscience and Remote Sensing Letters*, 9, 43-46.
- Rudnick, D. L., Jan, S., Centurioni, L., LEE, C.-M., Lien, R.-C., Wang, J., Lee D.-K., Tseng, R.-S, Kim, Y.-Y. and C.-S. Chern, 2011, Seasonal and Mesoscale Variability of the Kuroshio Near Its Origin, *Oceanography*, 24, 50-61
- Chen, G.-Y., Su, F.-C.*, Wang, C.-M., Liu, C.-T. and Tseng, R.-S., 2011, Derivation of internal solitary wave amplitude in the South China Sea deep basin from satellite images, *J. Oceanography*, 67, 689-697.
- Su, F.-C., Tseng, R.-S.*, Ho, C.-R., Lee, Y.-H. and Q. Zheng, 2010, Detecting surface Kuroshio front from multi-channel satellite data using neural networks, *IEEE Geoscience and Remote Sensing Letters*, 7, 718-722
- Chang, Y.-C., Tseng, R.-S.*, Centurioni, L. R., 2010, Typhoon-induced strong surface flows in the Taiwan Strait and Pacific. *J. Oceanography*, 66, 175-182
- Chang, Y.-C., Tseng, R.-S.*, and C.-T. Liu, 2008, Evaluation of Tidal Removal Method Using Phase Average Technique from ADCP Surveys Along the Peng-hu Channel in the Taiwan Strait, *TAO*, 19, 433-443
- Tseng, R.-S. and E.A. D’Asaro, 2004, Measurements of turbulent vertical kinetic energy in the ocean mixed layer from Lagrangian floats, *J. Physical Oceanography*, 34, 1984-1990
- Liu, C.-T., C.-H. Nan, C.-R. Ho, N.-J. Kuo and M.-K. Hsu, R.-S. Tseng, 2004, Application of Satellite Remote Sensing on the Tuna Fishery of Eastern Tropical Pacific. Edited by C Hwang, CK Shum and JC Li: *Satellite Altimetry for Geodesy, Geophysics and*

Oceanography, International Association of Geodesy Symposia, 126, 175-182, Springer-Verlag, Berlin.

- Tseng, R.-S. and Y.-T. Shen, 2003, Lagrangian observations of surface flow patterns in the vicinity of Taiwan, *Deep-Sea Research*, Part II, 50, 1107-1115
- Tseng, R.-S., 2002, On the dispersion and diffusion near estuaries and around islands, *Estuarine, Coastal and Shelf Science*, 54, 89-100
- Tseng, R.-S., Z. S. Wu and C. C. Huang, 2000, Model study of a shoreline wave power system, *Ocean Engineering*, 27, 801-821
- Tseng, R.-S., 1998, Turbulence measurements of wind, temperature and humidity over the ocean, *Proceedings of the National Science Council, Part A*, 22(1): 8-16
- 曾若玄, 許國榮, 廖克恆, 1998, 台南與高屏沿岸表層流況及水平擴散之觀測, *中國土木水利工程學刊*, 10(1):69-78
- 莊弘豪, 曾若玄, 1998, 利用 LANDSAT 和 NOAA 衛星遙測電廠溫排水口附近海面溫度之研究, *航測及遙測學刊*, 3(2):17-46
- 林首杰, 曾若玄, 1997, 台灣海峽南部大氣邊界層內動量, 顯熱與潛熱通量之量測, *大氣科學*, 25(1):1-26
- 曾若玄, 李文鴻, 1995, 利用慣性消散法估算風應力及熱通量之研究, *台灣海洋學刊 (ACTA OCEANOGRAPHICA TAIWANICA)*, 34(3): 53-70
- Tseng, R.-S., and T. Maxworthy, 1995, Laboratory studies of particle dispersion in two-dimensional turbulence, *Chinese J. of Mechanics*, 11(1): 55-62.
- Skop, R. A., R.-S. Tseng and J. W. Brown, 1993, Effects of salinity and surface tension on microbubble-mediated sea-to-air transfer of surfactants, *J. Geophysical Research*, 98(c5): 8489-8494.
- Tseng, R.-S., Y. -H. L. Hsu and Jin, Wu, 1992, Methods of measuring wind stress-discussions of displacement height and von Karman Constant, *Boundary-Layer Meteorology*, 58: 51-68
- Tseng, R.-S., J. T. Viechnicki, R. A. Skop and J. W. Brown, 1992, Sea-to-air transfer of surface-active organic compounds by bursting bubbles, *J. Geophysical Research*, 97(c4):5201-5206
- Brown, J.W., R. A. Skop, J. Viechnicki and R.-S. Tseng, 1992, Transfer of surface-active organic materials from seawater to the air-water interface by an ascending current field, *Fluid Dynamics Research*, 9:97-105.
- Tseng, R.-S. and T. Maxworthy, 1990, The dynamics and geometry of a two-dimensional turbulent front, *Physics of Fluids*, A2(7): 1224-1230
- Wu, Jin and R.-S. Tseng, 1987, Low temperature effects of flow in sandbed streams, (Discussion), *J. Hydraulics Division, ASCE*, 113(1): 113-115

Grants:**近三年內執行之科技部研究計畫**

計畫名稱 (本部補助者請註明編號)	計畫內擔任之工作	起迄年月	補助或委託機構
海洋邊界層內之混合與擾流	主持人	2016/08/01~ 2017/07/31	科技部
沿岸湧升流與強烈的垂直混合效應(I)(104-2611-M-110-008-)	主持人	2015/08/01~ 2016/07/31	科技部
北南海陸棚區海洋微尺度擾流的直接觀測(103-2611-M-110-016-)	主持人	2014/08/01~ 2015/07/31	科技部
台灣西南海域流況之分析與模擬(III)(103-2623-E-110-002-D)	主持人	2014/01/01~ 2015/03/31	科技部
台灣海峽東南部大陸邊緣的內潮及垂直混合(102-2611-M-110-016-)	主持人	2013/08/01~ 2014/07/31	科技部
海研三號貴重儀器使用中心(102-2119-M-110-003-)	共同主持人	2013/08/01~ 2014/10/31	科技部
台灣西南海域流況之分析與模擬(II)(102-2623-E-110-003-D)	主持人	2013/01/01~ 2013/12/31	科技部
中小尺度擾動對熱帶海域生化之影響,一總計畫及子計畫: 島嶼與路岬所造成的尾流與渦漩之研究(101-2611-M-110-006-)	主持人	2012/08/01~ 2013/10/31	科技部
海研三號貴重儀器使用中心經費(101-2119-M-110-002-)	共同主持人	2012/08/01~ 2013/10/31	科技部

近三年內執行之建教研究計畫

計畫名稱 (本部補助者請註明編號)	計畫內擔任之工作	起迄年月	補助或委託機構
106 年度國立海洋生物博物館附近海域海象調查監測	主持人	2017/01/01~ 2017/12/31	國立海洋生物博物館
105 年度國立海洋生物博物館附近海域海象調查監測	主持人	2016/01/01~ 2016/12/31	國立海洋生物博物館

104 年度國立海洋生物博物館 附近海域海象調查監測	主持人	2015/01/01～ 2015/12/31	國立海洋生物博物 館
永安港浚渫工程完成後環境監測 作業服務工作	主持人	2015/03/05～ 2018/12/31	威騰有限公司
永安港疏浚維護工程-海洋棄置 許可環境監測計畫(海流監測)	主持人	2016/10/20～ 2017/06/30	威騰有限公司