

Chen, Yi-Leng

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1. Education

National Central University, Taiwan	Atmospheric Physics	BS	1972
University of Illinois at Urbana-Champaign	Atmospheric Sciences	MS	1976
University of Illinois at Urbana-Champaign	Atmospheric Sciences	PhD	1980

2. Professional Experience

1996 to present	Professor, (Associate Professor, 1990-1996; Assistant Professor, 1984-1990) Department of Atmospheric Sciences, University of Hawaii.
1984	Atmospheric Scientist, OPHIR Co., Lakewood, Colorado.
1983-1984	Research Associate, Iowa State University.
1980-1983	Project Scientist I, NCAR, Boulder, Colorado.

Honors:

Distinguished Alumni, National Central University, Taiwan, 2009
Chair Professor, National Central University, Taiwan, 2013-Present

(A) Research

Referred Publications Since 2013:

- Hsiao F., Y.-L. Chen and D. E. Hitzl, 2020: Numerical simulations of local afternoon heavy rainfall events over Central Oahu under weak wind conditions during the warm season. *Mon. Wea. Rev.*, (accepted pending revisions).
- Hitzl, D.E., Y.-L. Chen and F. Hsiao, 2020: Wintertime easterly and southeasterly airflow in the 'Alenuihaha Channel, Hawaii. *Mon. Wea. Rev.*, 148, 1337-1362
- Tu C.-C., Y.-L. Chen, P.-L. Lin, P.-H. Lin, 2020: The relationship between the boundary layer moisture transport from the South China Sea and heavy rainfall over Taiwan, *Terr. Atmos. Ocean. Sci.*, **31**, 159-176
- Huang, Y.-F., and Y.-L. Chen, 2019: Numerical simulations of seasonal variations of rainfall over the Island of Hawai'i. *J. Appl. Meteor. and Climate*, **58**, No. 6, 1219-1232.
- Chen, Y.-L., Y. Chu, C.-S. Chen, C.-C. Tu, J.-S. Deng, and P.-L. Lin, 2018: Analysis and Simulations of a heavy rainfall event over northern Taiwan during 11-12 June 2012. *Mon. Wea. Rev.*, **146**, 2697-2715 (<https://doi.org/10.1175/MWR-D-18-0001.1>).
- Dorian, T., B. Ward, and Y.-L. Chen, 2018: Tropical Cyclone Amos (2016) forecasting challenges: A model's perspective. *Tropical Cyclone Research and Review*, DOI: 10.6057/2018TCRR03.03.

- Storlazzi C. D., M. van Ormondt, Y.-L. Chen and E. P. Elias, 2017: Modeling fine-scale coral larval dispersal and interisland connectivity to help design mutually-supporting coral reef Marine Protected Areas: Insights from Maui Nui, Hawaii. *Frontiers in Marine Science*, DOI:10.3389/fmars.2017.00381
- Li, L. and Y.-L. Chen, 2017: Numerical Simulations of Two Trapped Mountain Lee Waves Downstream of Oahu. *J. Appl. Meteor. and Climate*, **56**,1305-1324.
- Tu, C.-C., Y.-L. Chen, S.-Y. Chen, Y.-H. Kuo and P.-L. Lin, 2017: Impacts of including rain evaporative cooling in the initial conditions on the prediction of a coastal heavy rainfall event during TiMREX. *Mon. Wea. Rev.*, **145**, 253-277
- Winning, T., Y.-L. Chen, F. Xie, 2017: Estimation of the Marine Boundary Layer Height Over the Central North Pacific Using GPS Radio Occultation. *Atmos. Res.* **183**, 362-370 (doi:10.1016/j.atmosres.2016.08.005).
- Tam, E. K., R. Miike, S. Labrenz, E. Avol, A. J. Sutton, T. Elias, K. Tantisira, Y.-L. Chen, J. Davis, D. Dockery, 2016: Volcanic air pollution over the Island of Hawaii: Emissions, dispersal, composition - Association with respiratory symptoms and lung function in Hawaii Island School children. *Envir. Inter.* 92-93: 543-552. (DOI: 10.1016/j.envint.2016.03.025).
- Li, N., K.-F. Cheung, J. S. Stopa, F. Hsiao, Y.-L. Chen, V. Luis, P. Cross, 2016: Thirty-four years of Hawaii wave hindcast from downscaling of Climate Forecast System Reanalysis. *Ocean Modelling*, **100** (2016), 78-95
- Du, Y., Y.-L. Chen and Q. Zhang, 2015: Numerical simulations of the boundary layer Jet off the southeastern coast of China. *Mon. Wea. Rev.* **143**, 1212-1231.
- Hsiao, F., and Y.-L. Chen, 2014: Revisiting the structure and characteristics of an early summer monsoon trough over South China in 1975. *SOLA*, **10**, 194-198. (DOI code: 10.2151/sola.2014-041)
- Hitzl, D.E., Y.-L. Chen and H.V. Nguyen, 2014: Numerical simulations and observations of airflow through the 'Alenuihaha Channel, Hawaii. *Mon. Wea. Rev.* **142**, 4696-4718.
- Nguyen, H.V., and Y.-L. Chen, 2014: Improvements to a tropical cyclone initialization scheme and impacts on forecasts. *Mon. Wea. Rev.*, **142**, 4340-4356.
- Du, Y., Q. Zhang, Y.-L. Chen, Y. Zhao, and X. Wang, 2014: Numerical simulations of spatial distributions and diurnal variations of low-level jets in China during early summer. *J. Climate*, **27**, 5747-5767.
- Chen, C.-Y., Y.-L. Chen and H. V. Nguyen, 2014: The spin-up process of a cyclone vortex in a tropical cyclone initialization scheme and its impact on the initial TC structure. *SOLA*, **10**, 93-97.
- Zhou, C and Y.-L. Chen, 2014: Assimilation of GPS RO refractivity data and its impact on simulations of trade wind inversion and a winter cold front in Hawaii. *Natural Science*, **6**, 605-614.(DOI code: 10.4236/ns.2014.68060) (Special Issue on "Weather Forecasting")
- Tu, C.-C., Y.-L. Chen, C.-S. Chen, P.-L. Lin and P.-H. Lin, 2014: A comparison of rainfall distributions between two heavy rain periods during terrain-influenced monsoon rainfall experiment (TiMREX) 2008. *Mon. Wea. Rev.*, **142**, 2436-2463

- Chen, Y.-L., P.-L. Lin, F. Hsiao, P.-S. Chu, M.-H. Su, 2013: Asia-pacific natural hazard conference: disastrous weather in a changing climate. *Bull. Amer. Meteor. Soc.*, **94**, ES175-ES178. (DOI code: 10.1175/BAMS-D-12-00220.1)
- Chen, C.-Y., Y.-L. Chen, C.-S. Chen, P.-L. Lin, and C.-L. Liu, 2013: Revisiting the heavy rainfall event over northern Taiwan on 3 June 1984. *Terr. Atmos. Ocean. Sci.*, **24**, 999-1020. (DOI code: 10.3319/TAO.2013.07.04.01(A))
- Giambelluca, T. W., Q. Chen, A. G. Frazier, J. P. Price, Y.-L. Chen, P.-S. Chu, J. K. Eischeid, D. M. Delparte, 2013: Online rainfall atlas of Hawai'i. *Bull. Amer. Meteor. Soc.*, **94**, 313-316.
- Stopa, J. E., J.-F. Filipot, N. Li, K. F. Cheung, Y.-L. Chen, and L. Vega, 2013: Wave energy resources along the Hawaiian Island chain. *Renewable Energy*, **55**, 305-321.

Grants and Contracts Since 2013:

- NOAA, Development of an experimental high-resolution numerical weather prediction system for the Northern Mariana Islands/Guam. \$100,000. 02/02/2013-05/31/2015. (PI: Chen).
- DOE, Advanced Wave Modeling (Atmospheric modeling component): \$252,063. (Chen's portion) 09/15/08-09/30/15.
- UCAR/NOAA, GOES-R Partners Project-Applications of satellite data for model initialization and verification to improve weather forecasting in Hawaii. \$19,979. 08/17/2015-08/31/2016. (PI: Chen)
- Project: A High-Resolution Tropical Cyclone Initialization Scheme for the Central Weather Bureau, Sponsor: National Central University, Taiwan. Award: \$50,021. 08/18/2015-12/31/2016.
- UCAR/NOAA, Improvements to an experimental high-resolution numerical weather prediction system for the Northern Marianas Islands/Guam. \$19,979. 10/8/2015-2/28/2017 (PI: Chen).
- NOAA, Developing the Pacific Islands Ocean Observing System (PacIOOS): Atmospheric Modeling Component. \$385,715. (Chen's portion) 06/01/11-5/31/17.
- IISI, A High-Resolution Tropical Cyclone Initialization Scheme for the Central Weather Bureau (II). \$104,587. 11/01/2015-12/31/2018 (PI: Chen).
- NSF, Characteristics of Island-scale Airflow and Climate over the Hawaiian Islands \$402,344. 02/01/2012-12/31/2018 (PI: Chen)
- NSF Supplement: \$30,000.
- COMET/UCAR/NOAA High resolution experimental forecasts over the Hawaiian Islands, Guam/CNMI, American Samoa and hindcast of historical tropical cyclones. \$14,989, 03/01/2019-04/30/2020 (PI: Chen)
- COMET/UCAR/NOAA Application of a TC initialization scheme to improve intensity forecasts \$14,989. 9/10/2019-7/31/2020 (PI:Chen)
- OIA, Pacific Island Ocean Observing System for the Enhancing Public Safety with Improved Atmospheric and Wave Forecasts for Guam, CNMI, and AS (PI: Melissa Iwamoto, Chen's portion: \$245,762. 07/01/2018-09/30/2021.

Synergistic Activities Since 2013:

An U.S. participant in the first U.S.-Taiwan workshop on "Extreme Precipitation and Weather", Taipei, Taiwan, 29-31 April, 2015, supported by Taiwan's Ministry of Science and Technology (MOST) and the U.S. National Science Foundation (NSF).
Invited Speaker, 48th Annual Session of the ESCAP/WMO Typhoon Committee, 22-25 Feb., 2016, Honolulu, Hawaii.
Program Co-Chair and Co-Organizer of the Second U.S. Taiwan Extreme Precipitation Workshop, East-West Center, Honolulu, 6-8 September, 2016 funded by NSF.
A keynote speaker for the Taipei Severe Weather and Extreme Precipitation Workshop, 22-24 May 2017, Academia Sinica, Taipei, sponsored by the Meteorological Society of the Republic of China, Taiwan.
A keynote speaker for the International Conference on Mesoscale Convective Systems and High-Impact Weather - XII, October 17-20, 2017, National Taiwan University, Taipei, sponsored by MOST.
Invited Speaker: ACTS workshop: Toward Improvements on Severe-Weather Forecast Benefited from the International Joint Field Experiment in 2020, 26-27 November 2018, Taiwan Typhoon and Flood Research Institute, Taipei, Taiwan.
Invited Speaker: 2019 Joint INDOPACOM Theater METOC Summit and Tropical Cyclone Conference, 8-12 April, Joint Typhoon Warning Center, Honolulu, HI.
Invited Speaker: 2019 International Dongsha Conference, 13-14 June, Kaoshiung, Taiwan, Sponsored by Ocean Affairs Council, Taiwan.
Invited Speaker, Severe Weather and TAHOPE Planning Workshop. 14-16 October, 2019, National Taiwan University, Taipei, Taiwan sponsored by MOST.
On the US Science Team of PRECIP/TAHOPE.

(B) Instruction

Courses offered:

ATMO 405 Satellite Meteorology
ATMO 607 Mesoscale Meteorology
ATMO 610 Tropical Climate and Weather (team taught)
ATMO 412 Meteorological Analysis Lab team taught)
ATMO 699 Directed Research
ATMO 700 Thesis Research
ATMO 800 Dissertation Research

Graduate Students Supervision:

Chuan-Chi Tu (PhD, 2013), Thomas Winning, Jr. (MS, 2014), Liye Li (MS, 2015), David Hitzl (MS, 2013), Yu-Fen Huang (MS, 2016), Jie Chen (MS, 2016), Y. Fan (MS, 2017, Plan B), Zhilin Li (MS, 2018, Plan B), J. Zhu (MS, Plan B, 2020), Feng Hsiao (PhD, 2020), Q. Sun (MS, in progress), Chuan-Kai Wang (PhD, in progress), David Hitzl (PhD, in progress).

Postdoc Researchers Supervision:

Chih-Ying Chen (2013-2015), Feng Hsao (2020-).

(C) **Service Since 2013**

Professional Service:

Recent Co-Chair of a Conference Session:

Taiwan Geoscience Assembly, 13-17 May, 2013, National Taiwan University, Taipei.

US-Taiwan Extreme Precipitation and Weather Workshop, Taipei, Taiwan, 29-30 May, 2015, National Science Foundation, US, and the Ministry of Science and Technology, Taiwan.

International Conf. on Earth Observations and Society Impacts and ICLEI Resilience Forum. June 28-30, 2015, Kaoshiung, Taiwan. Sponsored by Taiwan Group on Earth Observations.

International Conf. on Mesoscale Convective Systems and High-Impact Weather - XII, October 17-20, 2017, National Taiwan University, Taipei, Taiwan Geoscience Union. Taipei Severe Weather and Extreme Precipitation Workshop, 22-24 May 2017, Academia Sinica, Taipei, Taiwan, sponsored by the Meteorological Society of the Republic of China.

AS35: Mountain and Island Effects on Airflow, Precipitation, Weather, and Climate.

The 15th AOGS Annual Meeting, Honolulu, 3–8 June, 2018, Asian Oceania Geoscience Society.

AS23 - Observation, Modeling, Theory and Climatology of Mesoscale Processes. The 15th AOGS Annual Meeting, Honolulu, 3–8 June, 2018, Asian Oceania Geoscience Society.

Severe Weather and Taiwan-Area Heavy-rain Observation and Prediction Experiment (TAHOPE) (<http://tsafe.cwb.gov.tw/TAHOPE/home>) Planning Workshop. 14-16 October, 2019, National Taiwan University, Taipei, Taiwan, sponsored by MOST.

Journal Editorship:

Visiting Guest Editor: Tropical Cyclone Research and Review, WMO, 2016.

Review Editor: Frontiers in Earth Science-Atmospheric Science Section

Invited Visits and Seminars:

National Central University, Taiwan; National Taiwan University, Taipei, Taiwan; National Taiwan Normal University, Taipei, Taiwan; Central Weather Bureau, Taipei, Taiwan; National Center for Disaster Reduction, Taipei, Taiwan; Academia Sinica, Taipei, Taiwan; Shanghai Typhoon Institute, Shanghai, China; NUIST, Nanjing, China; National Nanjing University, Nanjing, China; National Zhejiang University, Hanzhou, China; National Sun Yat-Sen University, Guangzhou, China.

University Service:

2014-2015: member, Manoa International and Exchange Committee (MIEC).

2015-2016: Chair, TPRC #17.

2018-2019: TPRC #8.

International Agreements

2015: Establish MOA between the UHM and the National Central University, Taiwan through Manoa International Exchange (MIX). (http://www.atm.ncu.edu.tw/news_1.php?id=218).

2015: Establish MOU between SOEST/UHM and the Central Weather Bureau, Taiwan (CWB).

2015: Establish MOU between SOEST/UHM and the National Science and Technology Center for Disaster Reduction, Taiwan. 24-27 April, 2015: Hosted the visit of Central Weather Bureau delegates led by the Director General Dr. Shin.

Department Service:

2014-2015: Graduate Chair.

2008-2016: UHPA Representative

Community Service:

2016–Present, Faculty Advisor, Taiwanese Student Association, University of Hawaii at Manoa

2018–Present, Chair, Board of Directors, Hawaii Taiwan Culture and Education Organization (<http://hteco.org/>)

2016- 2018, Vice Chair, Board of Directors, Hawaii Taiwan Culture and Education Organization