

VITAE

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A. Current Position:

Professor of Earth and Atmospheric Sciences, Purdue University (since 1988)
Faculty member in Computational Science and Engineering (CS&E) Program;

B. Education:

Ph.D. (1975): The University of Chicago, Geophysical Sciences
MS (1972): The University of Chicago, Geophysical Sciences
BS (1968): National Taiwan University, Atmospheric Sciences

C. Professional Experience

May 2019-Aug. 2019: Visiting Professor , Institute for Space-Earth
Environmental Research (ISEE), Nagoya University, Japan
Jan. 2015 -present: Chair Professor, National Central University, Taiwan
Dec.2014-Jan.2015: Visiting Professor at Research Center for Environmental Changes,
Academia Sinica, Taipei, Taiwan
May 2014-Aug. 2014: Visiting Professor, Hydrospheric Atmospheric Research Center,
Nagoya University, Japan
Dec.2013-Jan.2014: Visiting Professor at Research Center for Environmental Changes,
Academia Sinica, Taipei, Taiwan
May-August.2013: Chair Professor for National Science Council, Taiwan, and Chair
Professor, National Central University, Taiwan
May-August, 2012: Visiting Professor, Hydrospheric Atmospheric Research Center,
Nagoya University, Japan
June-August.2011: Chair Professor for National Science Council, Taiwan, and Chair
Professor, National Central University, Taiwan
August-Dec. 2010: Visiting Professor, Hydrospheric Atmospheric Research Center,
Nagoya University, Japan
May-July, 2010: Chair Professor, National Central University, Taiwan
May –August 2009: Visiting Scientist/Scholar at CIRA/Colorado State Univ.
/ESRL/Global Systems Division/NOAA, Boulder, CO. USA,
Jan. 2008-Aug. 2008: Director of the National Center for Typhoon
and Flooding Research, Tai-chung, Taiwan

May 2006-Dec.2007: Chief Scientist, National High Performance Computing Center, Hsing-chu, Taiwan
 May 2006-Aug. 2009: University Chair Professor, Institute of Environmental Engineering, National Chia-Tung University, Hsin-chu, Taiwan
 May 2006-Aug. 2011: University Chair Professor, Department of Atmospheric Sciences, National Central University, Chung-Li, Taiwan
 May-August 2004: Visiting Professor, Center for Climate System Research, University of Tokyo, Japan
 January-July 2002: Visiting Professor, National Taiwan University
 May -June 1996 Visiting scientist, Meteorological Institute Stockholm University Stockholm, Sweden
 1995-1996: Visiting Professor, National Taiwan University & National Normal University, Taiwan
 1988-present Professor of Earth and Atmospheric Sciences, Purdue University
 1984-1988: Associate Professor of Earth and Atmospheric Sciences, Purdue University
 1979-1984: Assistant Professor of Earth and Atmospheric Sciences, Purdue University
 1978-1979: Visiting Scientist, Geofluid Dynamics Program, Princeton University
 1975-1978: Research Assistant Professor, Laboratory for Atmospheric Research, University of Illinois

- D. Professional Recognition
 Who's Who in Sciences Higher Education
 Who's who among Asian Americans
 Who's who in America
 North American Taiwanese Professors' Association (Vice President, 92-93; President 93 - 94)
 American men and women of science
 Associate Editor for the Scientific Journal: Terrestrial, Atmospheric and Oceanic Science (1993-97)
 Honorable member of Editorial Board for Global Journals embraces 37 International peer reviewed research journals (2010-).

Publications (refereed).

Haines, P., W, Y, Sun, S. H. Chen, W. R. Hsu, and M. E. Hsieh, 2019: NTU/PU model simulations and observed flow over mountain. *Terr. Atmos. Ocean. Sci.* 30, 171-184.
 Sun, W.Y., and O. M. Sun, 2019: Revisiting the parcel method and CAPE, *Dynamics of Atmospheres and Oceans* 86, 134-152.
 Lin, M-Y, W. Y. Sun, M-D. Chiou, C-Y. Chen, H.-Y. Cheng, and C.-H. Chen, 2018: Development and evaluation of a storm surge warning system in Taiwan. *Ocean Dynamics*. <https://doi.org/10.1007/s10236-018-1179-z>.
 Sun, W. Y., 2018: Hydraulic jump and Bernoulli equation in nonlinear shallow water model. *Dynamics of Atmosphere and Ocean*, 82 (2018), 37-53.
<https://doi.org/10.1016/j.dynatmoce.2018.02.003>

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- Sun, W. Y., and O. M. Sun, 2017: Backward Integration of Diffusion Equation. *Aerosol and Air Quality Research*, 17, 278-289. Doi: 10.4209/aaqr.2016.06.0271.
- Sun, W. Y., 2016: The Vortex Moving toward Taiwan and the influence of the Central Mountain Range. *Geosci. Lett.*3:21. DOI 10.1186/s40562-016-0052-5
- MacCall, B.-T., Y.-Wang, W. Y. Sun, 2015: A New Semi-Implicit Time Integration Scheme for the Time-Dependent Atmospheric Boundary Layer Environment (ABLE) Model. ARL-TR-7428.
- Sun, W. Y., and O. M. Sun: 2015: Bernoulli Equation and Flow over a Mountain. *Geoscience Letters* (2015) 2:7. DOI 10.1186/s40562-015-0024-1
- Min, K.-H., and W. Y. Sun, 2015: Atmosphere-Cryosphere Coupled Model Development and Its Application for Regional Climate Studies, *Advances in Meteorology*, 2015, ID 764970, <http://dx.doi.org/10.1155/2015/764970>.
- Sun, W. Y., 2013: Numerical Study of Severe Downslope Storm. *Weather and Climate Extremes*: <http://dx.doi.org/10.1016/j.wace.2013.10.002>.
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- Sun, W. Y, O. M. Sun, and K. Tsuboki, 2013: A Modified Atmospheric Nonhydrostatic Model on Low Aspect Ratio Grids-Part II. *Tellus A* 2013, 65, 19681, <http://dx.doi.org/10.3402/tellusa.v65i0.19681>
- Sun W. Y, O. M. T. Sun, 2013: Numerical Simulation of Rossby Wave in Shallow Water. *Computers & Fluids*, 76, 116-127.
- Sun, W. Y, O. M. T. Sun, and K. Tsuboki, 2012: A Modified Atmospheric Nonhydrostatic Model on Low Aspect Ratio Grids, *Tellus A* 2012, 64, 17516, <http://dx.doi.org/10.3402/tellusa.v64i0.17516>
- Sun W-Y, O. M. T. Sun, 2011: A modified leapfrog scheme for shallow water equations. *Computers & Fluids* 52 (2011) 69–72
- Sun, W. Y., 2011: Instability in Leapfrog and Forward-Backward Schemes: Part II: Numerical Simulation of Dam Break. *J. Computers and Fluids*, 45, 70-76.
- Chen, S.-H., J.-Y. Chen, W.-Y. Chang, P.-L. Lin, P.-H. Lin, and W. Y. Sun (2011), Observing System Simulation Experiment: Development of the system and preliminary results, *J. Geophys. Res.*, 116, D13202, doi:10.1029/2010JD015103.
- Sun, W. Y., K. H. Min, and J-D. Chern, 2011: Numerical study of 1998 flooding in East Asia. *Asia-Pacific J. Atmos. Sci.*, DOI: 10.1007/s13143-011-0003-1.
- Sun, W. Y., 2010: Instability in leapfrog and forward-backward Schemes. *Mon. Wea. Rev.* 138, 1497-1501

- Sun, W. Y., 2010: 從凡那比颱風談起: Aurora, Nov. 16, 2010
- Sun, W. Y. and J. D. Chern, 2010: One-Dimensional Sea Ice-Ocean Model Applied to SHEBA Experiment in 1997-1998 Winter: *Terr. Atmos. Ocean. Sci.*, Vol. 21, No. 1, 1-15
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- Sun, W. Y., 2006a: Regional Climate Modeling McGraw-Hill 2006 Yearbook of Science & Technology, 281-283
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- Sun, W. Y., J. D. Chern, and M. G. Bosilovich, 1995: Numerical study of regional climate. Proceeding of High Performance Computing- ASIA' 95. Taipei, Taiwan, September 18-22, 1995.
- Bosilovich, M. G., and W. Y. Sun, 1995: Formation and Verification of a land surface parameterization for atmospheric models. *Boundary-Layer Meteorology*, 73, 321-341.
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- Haines, A. P., and W. Y. Sun, 1994: A convective cloud model for use in a cumulus parameterization scheme. *Mon. Wea. Rev.* 122, 165-182.
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- Sun, W. Y. and Y. L. Chang, 1992: Barotropic instability of the modified hyper-tangent shear flows. *Beitrage zur Physik der Atmosphere*. 65, 193-210.
- Hsu, W.-R., and W. Y. Sun, 1992: Reply to "Comment on the numerical study of mesoscale cellular convection". *Boundary-Layer Meteorol.* 60, 405-406.
- Sun, W. Y., and C. C. Wu, 1992: Formation and diurnal oscillation of dryline. *J. Atmos. Sci.*, 49, 1606-1619.
- Hsu, W.-R., and W. Y. Sun, 1991: Numerical study of mesoscale cellular convection *Boundary-Layer Meteorol.* 57, 167-186.
- Sun, W. Y., J. D. Chern, C.C. Wu, and W. R. Hsu., 1991: Numerical simulation of mesoscale circulation in Taiwan and surrounding area. *Mon. Wea. Rev.* 119, 2558-2573.
- Sun, W. Y., 1990: Modified Eady waves and frontogenesis, Part I: Linear stability analysis. *Terrestrial, Atmospheric and Oceanic Sciences*, 1, 363-378.
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- Wu, C.-C., and W. Y. Sun, 1990: Diurnal oscillation of convective boundary layer. Part I: Cloud-free Atmosphere. *Terrestrial, Atmospheric and Oceanic Sciences*, 1, 23-43.
- Wu, C.-C., and W. Y. Sun, 1990: Diurnal oscillation of convective boundary layer. Part II: Cloudy Atmosphere. *Terrestrial, Atmospheric and Oceanic Sciences*, 2, 157-174.
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- Sun, W. Y., and W. R. Hsu, 1988: Numerical study of cold air outbreak over the warm ocean. *J. Atmos. Sci.*, 45,1205-1227.
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Other publications:

- Sheng Hsiang Wang^{1,2}, Ritesh Gautam^{1,3}, William K-M Lau¹, Si-Chee Tsay¹, Wen-Yih Sun⁴, Kyu-Myong Kim^{1,3}, Jiun-Dar Chern^{1,3}, Peter Richard Colarco¹, Nai-Yung Christina Hsu¹, Neng-Huei Lin, 2011: Impacts of Aerosol Direct Effects on the South Asian climate: Assessment of Radiative Feedback Processes Using Model Simulations and Satellite/surface Measurements. AGU, ID:1193191, 5-9 December **2011**, San Francisco, California, USA.
- Sun, W. Y. , W.-R. Hsu, P. Haines, M.-E. Hsieh, S.-H. Chen, and D. Grove, 2010: Numerical Simulations over Mountains,. The 3rd International Workshop on Next-Generation NWP models 29 Aug. – 1 Sep., 2010, Jeju, Korea. Abstract.
- Hsieh, M.-E., W. R. Hsu, and W. Y. Sun, 2010: Applications of a three-dimensional nonhydrostatic atmospheric model on uniform flows over an idealized mountain. 2010 Computational Fluid Dynamics Taiwan, Chung-Li, Taiwan, July 29-31, 2010. Reprint. p.1-12.
- Sun, W. Y., and O. M. T. Sun, 2009: Mass correction applied to semi-Lagrangian advection scheme” International Aerosol Modeling Algorithms (IAMA) conference. Extensive Abstract. Davis Ca. Dec. 9-11, 2009.
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- Sun, W. Y. 2008, "A New Semi-Implicit Scheme for Wave Equations" at the Conference on Modeling, Simulation and Optimization of Complex Processes,". Heidelberg, Germany, July 21-25, 2008
- Sun, W. Y. and J-S. Yang., 2008: "Numerical Simulations of Asian Aerosols and Their Regional Climatic Impacts: Dust storms and Bio-mass Burning", at the 15th Computational Fluid Dynamics Conference, Kaohsiung, Taiwan August 7-9, 2008.
- W. R. Hsu and W. Y. Sun, 2008: "Effects of the earth's rotation on Boulder downslope windstorm" at the 13th Conference on Mountain Meteorology, August 11–15, 2008, Whistler, BC, Canada
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- Sun, W. Y., and W. R. Hsu, 2008: "Effects of the earth's rotation on Boulder downslope windstorm" at the 13th Conference on Mountain Meteorology, August 11–15, 2008, Whistler, BC, Canada.
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- Sun, W. Y., 2007: A Conserved Semi-Lagrangian Scheme. The 1st Taiwan-USA Workshop on CESE Method (TAWCESE). Hsin-chu, Taiwan, August 13-14.
- Min, K. H., and W. Y. Sun: Atmosphere-cryosphere coupled model development and its application for regional climate studies. the 22nd Conference on Weather Analysis and Forecasting/18th Conference on Numerical Weather Prediction, Park City, Utah, June 25-29, 2007.
- Sun, W. Y. and J.-D. Chern, 2007: Numerical Study of Influence of Mountain Ranges in Taiwan on a cold front" at 2007 Taiwan Geosciences assembly (TGA), Long-Tan, Tao-Yen, Taiwan, May 15-18, 2007..
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