



Dr. Chun-Chieh Wu

Prof. Chun-Chieh Wu was born in Taitung, Taiwan. He received the B. S. degree in Atmospheric Science from National Taiwan University (NTU), Taipei, Taiwan, in 1986, and Ph. D. degree from Department of Earth Atmospheric and Planetary Sciences, Massachusetts Institute of Technology in 1993, under the supervision of Prof. Kerry Emanuel. After conducting the 1.5-year postdoc research in Geophysical Fluid Dynamics Laboratory, Princeton University, he joined the faculty position in Department of Atmospheric Sciences at NTU in 1994. He received Outstanding Research Awards from Ministry of Science and Technology (formerly National Science Council, NSC) of Taiwan three times in 2007, 2009, and 2012, and was elected the 50 Scientific Achievements in the NSC 50th Anniversary in 2009. He served as the Department Chair during 2008-2014 and Associate Dean of College of Science during 2013-2016, Editor-in-Chief of TAO (Terrestrial, Atmospheric and Oceanic Sciences) Journal during 2009-2012, member of the Committee of Tropical Meteorology and Tropical Cyclones of American Meteorological Society (AMS) during 2012-2017, and the Assistant Secretary General of Asia Oceania Geoscience Society (AOGS) during 2013-2015. In 2013, he received the Academic Award of Education, Taiwan. He was elected as Fellow of Meteorological Society of Taiwan in 2013. In 2014, he received the Editor's Award of the Journal of Atmospheric Sciences, AMS. Prof. Wu also served as the Director General of Department of Natural Sciences and Sustainable Development, Ministry of Science and Technology, Taiwan from September 2016 to August 2018. Prof. Wu has been serving as the (Assistant) Secretary General of AOGS (since 2015), President of Meteorological Society of Taiwan (since 2016), and Editor of the Journal of Atmospheric Sciences, AMS (since 2013). Prof. Wu was elected as the Fellow of AMS (2017), and received National Chair Professorship, Ministry of Education of Taiwan (2017). Prof. Wu has been serving as a member of the steering committee of Belmont Forum, as well as a member of the GRC Executive Committee, IUGG, since 2017.

Research Areas

Prof. Wu's research foci cover wide aspects of tropical cyclone (TC) dynamics, including TC motion, TC intensity, TC rainfall, concentric eyewall, targeted observation, TC-ocean interaction, and TC-terrain interaction. Prof. Wu has published more than 90 SCI journal papers.

CURRICULUM VITAE

Dr. Chun-Chieh Wu

● Date of birth: *July 1964* Place of birth: *Taitung, Taiwan*

Distinguished Professor, 2009.8-, Department of Atmospheric Sciences, National Taiwan University (NTU)

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Education:

Ph.D. from May, 1993, Massachusetts Institute of Technology, Major in Atmospheric Sciences

B.S. from Jun, 1986, National Taiwan University, Major in Atmospheric Sciences

Professional History

01/2019 – 05/2019, Visiting Professor, Lamont-Doherty Earth Observatory, Columbia University

10/2018 – 06/2019, Adjunct Senior Research Scientist, Lamont-Doherty Earth Observatory, Columbia University

09/2016 – 08/2018, Director General, Department of Natural Sciences and Sustainable Development, Ministry of Science and Technology, Taiwan.

10/2015 – 08/2016, Chairman, International Degree Program in Climate Change and Sustainable Development, College of Science, NTU

11/2013 – 08/2016, Associate Dean, College of Science, NTU

08/2008 – 07/2014, Chairman, Department of Atmospheric Sciences, NTU

01/2009 – 12/2014, Director, Typhoon Research Center, NTU

07/2004 – 06/2005, Adjunct Research Scientist, Lamont-Doherty Earth Observatory, Columbia University

01/2004 – 07/2004, Visiting Fellow, Geophysical Fluid Dynamics Laboratory, Princeton University

08/2000 – 07/2008, Professor, Department of Atmospheric Sciences, NTU

08/1994 – 07/2000, Associate Professor, Department of Atmospheric Sciences, NTU

08/1993 – 11/1994; 1995.7-9 Visiting Research Scientist, Geophysical Fluid Dynamics Laboratory, Princeton University

Professional Services:

Member, GRC Executive Committee (Union Commission on Geophysical Risk and Sustainability), IUGG, 11/2017 - present

Member, Steering Committee, Belmont Forum, 10/2017 - present.

President, Meteorological Society, Taiwan, 03/2017 - present

Assistant Secretary General, Asia Oceania Geosciences Society (AOGS), 06/2018 - present

Secretary General, Asia Oceania Geosciences Society (AOGS), 08/2016 - 06/2018

Assistant Secretary General, Asia Oceania Geosciences Society (AOGS), 08/2013 -07/2016

Editor, Journal of the Atmospheric Sciences (JAS) – American Meteorological Society (AMS), 07/2013 - present

Member, Committee on Tropical Meteorology and Tropical Cyclones, American Meteorological Society, 01/2012 – 12/2017

Editor, Asia-Pacific Journal of Atmospheric Sciences (Korea), 11/2015 – 12/2016

President/Vice President, Atmospheric Science Section, Asia Oceania Geosciences Society (AOGS), 08/2009 – 07/2013

Editor-in-Chief, Terrestrial, Atmospheric and Oceanic Sciences, 08/2009 – 07/2012

Advisory committee member, Atmos. Sci., Div. of Natural Sciences, National Science Council, Taiwan, 01/2008 – 12/2010

Chairman, Panel committee, Atmos. Sci., Div. of Natural Sciences, National Science Council, Taiwan, 01/2005 – 12/2007

Editor, Terrestrial, Atmospheric, and Oceanic Sciences, Chinese Geoscience Union, 08/2005 – 07/2009

Associate Editor, Terrestrial, Atmospheric, and Oceanic Sciences, Chinese Geoscience Union, 12/2004 – 07/2005

Chief Editor, Atmospheric Sciences, Meteorological Society of Taiwan, 01/2002 – 12/2003

Associate Editor, Monthly Weather Review, American Meteorological Society, 01/2002 – 01/2003

Managing Editor, Terrestrial, Atmospheric, and Oceanic Sciences, Chinese Geoscience Union, 06/1997 – 12/2003

Awards and Honors:

1. The National Chair Professorship, Ministry of Education (Taiwan), 2017
2. Fellow, American Meteorological Society (AMS), 2017
3. Appreciation Certificate from World Meteorological Organization (WMO), WWRP, THORPEX (2005-2014), 2014 (In recognition of outstanding contribution to the WMO THORPEX Programme for the years 2005- 2014)
4. Editor's Award for the Journal of the Atmospheric Sciences, American Meteorological Society (AMS), 2014

5. The Academic Award, Ministry of Education (Taiwan), 2013
6. Principal Investigator, Science Vanguard Research Program, National Science Council (NSC), 2013~2017
7. Fellow, Meteorological Society of ROC (Taiwan), 2013
8. 「New 100 Glories of Taiwan」, “Global Views Monthly” magazine, 2010
9. 「50 Scientific Achievements」, National Science Council (NSC) 50th Anniversary, 2009
10. Outstanding Teaching Award, National Taiwan University, 2008
11. Outstanding Research Award, National Science Council, Taiwan, 2007, 2009, 2012 (three times)
12. Academia Sinica Research Award for Junior Researchers, 2001

Research Interest:

1. Dynamics of tropical cyclones
2. Typhoon-ocean interaction
3. Typhoon-terrain interaction
4. Targeted observation in tropical cyclones
5. Rainfall processes associated with tropical cyclones
6. Tropical Cyclone and Climate

Memberships:

- Member of the American Meteorological Society.
- Member of the American Geophysical Union.
- Member of Asia Oceania Geoscience Society (AOGS)
- Member of the Meteorological Society, Taiwan.
- Member of the Chinese Geoscience Union, Taiwan.

Selected Publications

95. Cheng, C.-J. and C.-C. Wu*, 2018: The role of WISHE in secondary eyewall formation. *J. Atmos. Sci.*, **75**, 3823-3841.
94. Huang, Y.-H., C.-C. Wu*, and M. T. Montgomery, 2018: Concentric eyewall formation in Typhoon Sinlaku (2008). Part III: Horizontal momentum budget analyses. *J. Atmos. Sci.*, **75**, 3541-3563.
88. Chang, C.-C. and C.-C. Wu*, 2017: On the Processes Leading to the Rapid Intensification of Typhoon Megi (2010). *J. Atmos. Sci.*, **74**, 1169-1200.
85. Wu, C.-C.*, T.-H. Yen, Y.-H. Huang, C.-K. Yu, and S.-G. Chen, 2016: Statistical Characteristic of Heavy Rainfall Associated with Typhoons near Taiwan Based on High-Density Automatic Rain Gauge Data. *Bull. Amer. Meteor. Soc.*, **97**, 1363-1375.
83. Wu, C.-C.*, W.-T. Tu, J.-F. Pun, I-I Lin, and M. S. Peng, 2016: Tropical Cyclone-Ocean Interaction in Typhoon Megi (2010) - A Synergy Study Based on ITOP Observations and Atmosphere-Ocean Coupled Model Simulations. *J. Geophys. Res.*, **121**, 153-167.
63. Huang, Y.-H., M. T. Montgomery, and C.-C. Wu*, 2012: Concentric eyewall formation in Typhoon Sinlaku (2008) - Part II: Axisymmetric dynamical processes. *J. Atmos. Sci.*, **69**, 662-674.
62. Wu, C.-C.*, Y.-H. Huang, and G.-Y. Lien, 2012: Concentric eyewall formation in Typhoon Sinlaku (2008) - Part I: Assimilation of T-PARC data based on the Ensemble Kalman Filter (EnKF). *Mon. Wea. Rev.*, **140**, 506-527.
46. Wu, C.-C.*, G.-Y. Lien, J.-H. Chen, and F. Zhang, 2010: Assimilation of tropical cyclone track and structure based on the Ensemble Kalman Filter (EnKF). *J. Atmos. Sci.*, **67**, 3806-3822.
37. Wu, C.-C.*, J.-H. Chen, S. J. Majumdar, M. S. Peng, C. A. Reynolds, S. D. Aberson, R. Buizza, M. Yamaguchi, S.-G. Chen, T. Nakazawa, and K.-H. Chou, 2009: Intercomparison of Targeted Observation Guidance for Tropical Cyclones in the Northwestern Pacific. *Mon. Wea. Rev.*, **137**, 2471-2492.
26. Wu, C.-C.*, C.-Y. Lee, and I-I Lin, 2007: The effect of the ocean eddy on tropical cyclone intensity. *J. Atmos. Sci.*, **64**, 3562-3578.
25. Wu, C.-C.*, K.-H. Chou, P.-H. Lin, S. D. Aberson, M. S. Peng, and T. Nakazawa, 2007: The impact of dropwindsonde data on typhoon track forecasts in DOTSTAR. *Wea. and Forecasting*, **22**, 1157-1176.
24. Wu, C.-C.*, J.-H. Chen, P.-H. Lin, and K.-S. Chou, 2007: Targeted observations of tropical cyclone movement based on the adjoint-derived sensitivity steering vector. *J. Atmos. Sci.*, **64**, 2611-2626.
20. Lin, I-I, C.-C. Wu*, K. A. Emanuel, I-H. Lee, C. Wu, and F. Pan, 2005: The interaction of Supertyphoon Maemi (2003) with a warm ocean eddy. *Mon. Wea. Rev.*, **133**, 2635 - 2649.
19. Wu, C.-C.*, P.-H. Lin, S. Aberson, T.-C. Yeh, W.-P. Huang, K.-H. Chou, J.-S. Hong, G.-C. Lu, C.-T. Fong, K.-C. Hsu, I-I Lin, P.-L. Lin, C.-H. Liu, 2005: Dropwindsonde Observations for Typhoon Surveillance near the Taiwan Region (DOTSTAR): An overview. *Bulletin of Amer. Meteor. Soc.*, **86**, 787-790.

14. Wu, C.-C.*, T.-S. Huang, W.-P. Huang, and K.-H. Chou, 2003: A new look at the binary interaction: Potential vorticity diagnosis of the unusual southward movement of Typhoon Bopha (2000) and its interaction with Typhoon Saomai (2000). **Mon. Wea. Rev.**, *131*, 1289-1300.
11. Wu, C.-C.*, T.-H. Yen, Y.-H. Kuo, and W. Wang, 2002 : Rainfall simulation associated with Typhoon Herb (1996) near Taiwan. Part I: The topographic effect. *Wea. and Forecasting*, **17**, 1001-1015.
10. Wu, C.-C.*, 2001: Numerical simulation of Typhoon Gladys (1994) and its interaction with Taiwan terrain using GFDL hurricane model. *Mon. Wea. Rev.*, **129**, 1533-1549.
6. Wu, C.-C.*, and Y.-H. Kuo, 1999: Typhoons affecting Taiwan: Current understanding and future challenges. *Bulletin of Amer. Meteor. Soc.*, **80**, 67-80.
5. Wu, C.-C.*, and Y. Kurihara, 1996: A numerical study of the feedback mechanisms of hurricane-environment interaction on hurricane movement from the potential vorticity perspective. *J. Atmos. Sci.*, **53**, 2264-2282.
4. Wu, C.-C.*, and K. A. Emanuel, 1995a: Potential vorticity diagnostics of hurricane movement. Part I: A case study of Hurricane Bob (1991). *Mon. Wea. Rev.*, **123**, 69-92.
1. Wu, C.-C.*, and K. A. Emanuel, 1993: Interaction of a baroclinic vortex with background shear: Application to hurricane movement. *J. Atmos. Sci.*, **50**, 62-76.