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CURRENT POSITION and AFFILIATION

Project Professor, Department of Atmospheric Sciences, National Taiwan University

EDUCATION

Ph. D. (1987) Department of Atmospheric Sciences, University of California at Los Angeles, U.S.A.

B. S. (1980) Department of Atmospheric Sciences, National Taiwan University, Taipei, Taiwan, R.O.C.

EXPERIENCE

08/2018 – present Project Professor, Department of Atmospheric Sciences, National Taiwan University

08/2017 – 07/2018 Adjunct Professor Rank Specialist, Department of Atmospheric Sciences, National Taiwan University

07/1996 – 07/2017 Chief Researcher, Research and Development Center, Central Weather Bureau, Taipei, Taiwan

11/1992 – 6/1996: Researcher, Research and Development Center, Central Weather Bureau, Taipei, Taiwan

03/1990 - 08/1992: Scientific Officer, Laboratory for Environmental and System Analysis, Paul-Scherrer Institute, Switzerland

06/1988 - 08/1989: Alaxander von Humboldt Scholarship Recipient, Meteorological Institute, University of Munich, Germany

05/1987 - 05/1988: Scientific Programmer and System Analyst, Centel Corporation, Goddard Laboratory for Atmospheres, NASA/GSFC, U.S.A.

08/1980 - 04/1987: Research Assistant, Department of Atmospheric Sciences, University of California at Los Angeles, U.S.A.

08/1978 - 07/1980: Research Assistant, Academia Sinica, Taipei, Taiwan, R.O.C.

AWARDS, HONOURS

2017 Fellow, MSROC. (March 2017)

2014. Huang Sia Cian Award for the best journal paper in meteorology published in MSROC* journals (*Meteorological Society Republic of China)

1996. CWB Award in acknowledge the outstanding contribution to the phase 2 NWB development

1993. Huang Sia Cian Award for best paper in meteorological research published in MSROC* journals (*Meteorological Society Republic of China)

1988. Alaxander von Humboldt Research Fellowship for Postdoctoral Researchers

1983. UCLA Department of Atmospheric Sciences Student Bjerknes Award – For academic excellence (<http://web.atmos.ucla.edu/content/view/406/273/>)

CURRENT REASARCH FOCUS

Mong-Ming Lu's main research interests focus on analyzing and interpreting climate data and building statistical forecast models. She has published papers on seasonal prediction and predictability of typhoon activity, features of Asian monsoon interannual and decadal-scale variability, and long-term weather and climate variations in Taiwan. She has extensive experience in overseeing global weather and forecast system development, and model product evaluation and application. She is currently working on *The subseasonal-to-seasonal prediction and predictability of the weather and climate extremes in Taiwan and the South China Sea region* sponsored by Taiwan Ministry of Science and Technology and *Forecast evaluation and application of the S2S prediction in Taiwan and the South China Sea region* sponsored by the Central Weather Bureau of Taiwan Ministry of Transportation and Communications.

PUBLICATIONS (Refereed Journal papers)

- Chen, C.-C., Y.-R. Wang, Y.-L. Guo, Y.-Ch. Wang, and **M.-M. Lu**, 2019: Short-term prediction of extremely hot days in summer due to climate change and ENSO and related attributable mortality. *Science of the Total Environment*. Vol. 661, 10-17. (co-Corresponding Authors) <https://doi.org/10.1016/j.scitotenv.2019.01.168>
- Lee, S.-Y. and **M.-M. Lu**, 2018: Statistical prediction models for Taiwan winter temperature seasonal forecast and possible predictability sources. *Atmos. Sci.*, 46:2,125-149. (in Chinese w/ English Abs.) (Corresponding Author) <http://mopl.as.ntu.edu.tw/web/ASJ/46/46-2-1.pdf>
- Lu, M.-M.**, C.-T. Lee, and B. Wang, 2017: Predictability of late-season tropical cyclone accumulated kinetic energy around Taiwan 2 months ahead. *Int. J. Climatol.*, Published online in Wiley Online Library(wileyonlinelibrary.com) <https://doi.org/10.1002/joc.5307>
- Wang, L., and **M.-M. Lu**, 2017: The East Asian winter monsoon. *The Global Monsoon System: Research and Forecast (3rd Edition)*. Edited by C.-P. Chang, R. H. Johnson, N.-C. Lau, B. Wang, P. Webster, and M. Wheeler, pp. 51-61 (invited chapter). https://doi.org/10.1142/9789813200913_0005
- Lu, M.-M.** and P.-Y. Liu, 2017: Taiwan annual rainfall pattern and the Asian-Australian and western North Pacific monsoons. *Atmos. Sci.* 45:3,193-219. (in Chinese w/ English Abs.) (Corresponding Author) <http://mopl.as.ntu.edu.tw/web/ASJ/45/45-3-1.pdf>
- Cho, Y.-M. and **M.-M. Lu**, 2017: A downscaling method for predicting Taiwan Mei-yu seasonal extreme rainfall event frequency using a large-scale southwest flow index. *Atmos. Sci.*, 45:2. (in Chinese w/ English Abs.) (Corresponding Author) <http://mopl.as.ntu.edu.tw/web/ASJ/45/45-2-1.pdf>
- Zhang, Lei, T. Li, and **M.-M. Lu**, 2017: Surface Wind Energy Trends near Taiwan in Winter since 1871. *Terr. Atmos. Ocean. Sci.*, No. 3, 295-302. DOI: 10.3319/TAO.2016.04.29.01(A) DOI: 10.3319/TAO.2016.04.29.01(A) ,

- <http://tao.cgu.org.tw/index.php/articles/archive/atmospheric-science/item/1451>
Lu, M.-M., Y.-M. Cho, Y.-C. Lin, and N. Huang, 2016: The influence of Atlantic and Pacific multidecadal variability on Taiwan winter temperature centennial trend during the period 1911-2010. *Terr. Atmos. Ocean. Sci.*, DOI: 10.3319/TAO.2016.06.30.02,
<http://tao.cgu.org.tw/index.php/articles/archive/hydrology/item/1476>
- Paek, H., J.-Y. Yu, F. Zheng, and **M.-M. Lu**, 2016: Impacts of ENSO Diversity on the Western Pacific and North Pacific Subtropical Highs during Boreal Summer. *Clim. Dyn.* DOI 10.1007/s00382-016-3288-z
- Chang, C.-P., **M.-M. Lu**, and H. Lim, 2016: Monsoon Convection in the Maritime Continent: Interaction of Large-Scale Motion and Complex Terrain. *Meteorological Monographs. American Meteorological Society*. DOI: 10.1175/AMSMONOGRAPHS-D-15-0011.1 .
<http://journals.ametsoc.org/doi/pdf/10.1175/AMSMONOGRAPHS-D-15-0011.1>
- Kuo, Y.-C., M.-A. Lee, and **M.-M. Lu**, 2016: Association of Taiwan's October rainfall patterns with large-scale oceanic and atmospheric phenomena. *Atmospheric Research*, 180 (2016) 200–210.
<https://doi.org/10.1016/j.atmosres.2016.05.012>
- Kuo, Y.-C., M.-A. Lee and **M.-M. Lu**, 2016: Association of Taiwan's Rainfall Patterns with Large-Scale Oceanic and Atmospheric Phenomena. *Advances in Meteorology*. Volume 2016 (2016), Article ID 3102895, 11 pages.
<http://dx.doi.org/10.1155/2016/3102895>
- Paek, H., J.-Y. Yu, J.-W. Hwu, **M.-M. Lu**, and T. Gao, 2015: A Source of AGCM Bias in Simulating the Western Pacific Subtropical High: Different Sensitivities to the Two Types of ENSO. *Mon. Wea. Rev.*, 143, 2348–2362. doi:
<http://dx.doi.org/10.1175/MWR-D-14-00401.1>
- Yu, J.-Y., P.-K. Kao, H. Paek, H.-H. Hsu, C.-W. Hung, **M.-M. Lu**, and S.-I. An, 2015: Linking emergence of the Central-Pacific El Nino to Atlantic Multi-decadal Oscillation. *J. Climate*. 28, 651–662. <https://doi.org/10.1175/JCLI-D-14-00347.1>
- Yim, S.-Y., B. Wang, W. Xing, and **M.-M. Lu**. 2014: Prediction of Meiyu rainfall in Taiwan by multi-lead physical-empirical models. *Clim. Dyn.* . 44:3033-3042. DOI 10.1007/s00382-014-2340-0. (Corresponding Author)
- Lee, S.-Y. and **M.-M. Lu**, 2014: East Asian Winter Monsoon and Taiwan Climate Real-time Monitoring and Analysis Applied to 2010-2013 Winters *Atmos. Sci.*, 42:2,87-112. (in Chinese w/ English Abs.)
<http://mopl.as.ntu.edu.tw/web/ASJ/42/42-2-1.pdf>
- Lee, S.-Y. and M.-M. Lu, 2018: Statistical prediction models for Taiwan winter temperature seasonal forecast and possible predictability sources. *Atmos. Sci.*, 46:2,125-149. (in Chinese w/ English Abs.) (Corresponding Author)
<http://mopl.as.ntu.edu.tw/web/ASJ/42/42-2-1.pdf>
- Zou, Y., J.-Y. Yu, T. Lee, **M.-M. Lu**, and S. T. Kim, 2014: CMIP5 Model Simulations of the Impacts of the Two Types of El Nino on US Winter Temperature. *J. Geophys. Res.*, DOI: 10.1002/2013JD021064.
- Yu, H.-L., B.-L. Chen, C.-H. Chiu, **M.-M. Lu**, and C.-p. Tung, 2014: Analysis of

- space–time patterns of rainfall events during 1996–2008 in Yilan County (Taiwan). *Stoch Environ Res Risk Assess.*, DOI 10.1007/s00477-014-0928-x
- Cho, Y.-M. and **M.-M. Lu**, 2013: An analysis of the extreme dry spells in Taiwan and its variations during the recent one hundred years. *Atmos. Sci.*, 41:2,171-187. (in Chinese w/ English Abs.) (Corresponding Author)
<http://mopl.as.ntu.edu.tw/web/ASJ/45/45-2-1.pdf>
- Lee, C.-T. Lee, **M.-M. Lu** and J.-W. Hwu, 2013: Assessment of the climate simulation strengths and limitations of CWB global atmospheric general circulation model in the two-tier CFSv2. *Meteorological Bull.*, 51, 35-57. (in Chinese w/ English Abs.)
http://photino.cwb.gov.tw/rdcweb/lib/cd/cd07mb/5001_web/MB_50-1_forWeb-3.pdf
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- Yu, J.-Y., **M.-M. Lu** and S. T. Kim, 2012: A change in the relationship between tropical central Pacific SST variability and the extratropical atmosphere around 1990, *Environ. Res. Lett.* 7 (2012) 034025 (6pp)
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- Kim, S. T., J.-Y. Yu, and **M.-M. Lu**, 2012: Distinct Behaviors of Pacific and Indian Ocean Warm Pool Properties on Seasonal and Interannual Timescales. *J. Geophys. Res.* VOL. 117, D05128, 12 PP., 2012 doi:10.1029/2011JD016557
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- Lu, M.-M.**, P.S.Chu and Y.-C. Lin, 2010: Seasonal Prediction of Tropical Cyclone Activity in the Vicinity of Taiwan Using the Bayesian Multivariate Regression Method. *Wea. Forecasting*, 25, 1780-1759.

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<https://journals.ametsoc.org/doi/pdf/10.1175/2009JCLI2935.1>
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- Chu, P.-S., X. Zhao, C.-T. Lee, and **M.-M. Lu**, 2007: Climate prediction of Taiwan cyclone activity in the vicinity of Taiwan using the multivariate least absolute deviation regression method. *Terr. Atmos. Ocean. Sci.*, 18,805-825. DOI: 10.3319/TAO.2007.18.4.805(A)
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<http://mopl.as.ntu.edu.tw/web/ASJ/35/35-2-1.pdf>
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- Author) <http://mopl.as.ntu.edu.tw/web/ASJ/35/35-2-2.pdf>
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- Hung, C.-W., H.-H. Hsu, and **M.-M. Lu**, 2004: Decadal oscillation of Spring rain in Northern Taiwan. *Geophy. Rev. Lett.* 17, 699-710. <https://doi.org/10.1029/2004GL021344>
- Wang, B., LinHo, Y. Zhang, and **M.-M. Lu**, 2004: A unified definition of the summer monsoon onset over the South China Sea and East Asia. *J. Climate*, 17, 699-710. <https://doi.org/10.1175/2932.1>
- Lu, M.-M.** and R.-J. May, 2004: Using the pre-typhoon season Northwest Pacific typhoon numbers to predict Taiwan summer rainfall. *Atmos. Sci.*, 32,407-426. (in Chinese w/ English Abs.) <http://mopl.as.ntu.edu.tw/web/ASJ/32/32-4-5.pdf>
- Lu, M.-M.** and R.-J. May, 2003b: The January-March Precipitation in the region of Asian-Australian monsoon. *Atmos. Sci.*, 31,307-332. (in Chinese w/ English Abs.) <http://mopl.as.ntu.edu.tw/web/ASJ/31/31-4-1.pdf>
- Lu, M.-M.** and R.-J. May, 2003a: A study on the long-term variations of Taiwan and global precipitation. *Atmos. Sci.*, 31,199-220. (in Chinese w/ English Abs.) <http://mopl.as.ntu.edu.tw/web/ASJ/31/31-3-1.pdf>
- Lu, M.-M.** 2002: The biennial oscillations in Taiwan. *Terrestrial, Atmospheric and Oceanic Sci.*, 13:4,469-498 ° DOI: 10.3319/TAO.2002.13.4.469(A)
- Chen, M.-S. and **M.-M. Lu** 2002: A CCA Model for El Nino/La Nina Prediction. *Meteorological Bull.*, 44, 25-39. (in Chinese w/ English Abs.) (Corresponding Author)
- Pan, C. and **M.-M. Lu** 2002: A Comparison of the Products of CWB Global Forecast Systems during the Observational Phase of the SCSMEX. *Meteorological Bull.*, 44, 1-20. (in Chinese w/ English Abs.) (Corresponding Author)
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