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Education and Training:

Institution	Major	Degree	Year
National Central University, Chung-Li, Taiwan	Atmospheric Physics	BS	1989
State University of New York at Albany, Albany NY	Atmospheric Sciences	MS	1992
State University of New York at Albany, Albany NY	Atmospheric Sciences	PhD	1998

Academic and Professional Appointments

2019-present Senior Research Scientist, Joint Center for Satellite Data Assimilation, Boulder, CO (50% appointment)
2019-present Research Associate, Atmospheric Sciences Research Center, University at Albany, State University of New York, Albany, NY (50% appointment)
2014-2019 Research Associate (tenure track), Atmospheric Sciences Research Center, University at Albany, State University of New York, Albany, NY
2010-2014 Lead, Air Quality and Aerosol Modeling Support Task, I. M. Systems Group, Inc., Rockville, MD
2005-2010 Research Meteorologist, Science Applications International Corporation (SAIC), San Diego, CA

Volunteer Academic Services

- NOAA MAPP Climate Reanalysis Task Force (2013-2016)
- NOAA Climate Model Development Task Force (2014-2017)
- NOAA/NCEP Strategic Implementation Plan, co-chair Atmospheric Composition Working Group (2017-2021)
- NOAA/NCEP Strategic Implementation Plan, Communication and Outreach Working Group (2017-2021) and Verification and Validation Working Group (2020-present)
- NASA review panel: Applied Sciences Disasters Program, MAP prediction/predictability program
- Reviewers for J. Geophysics Research, Science of the Total Environment, Atmosphere, Int. J. Environmental Research and Public Health, Atmospheric Pollution Research, Healthcare, J Environmental Management

Peer-Reviewed Publications:

2023

Lin, C-A, Y. Zhang, G. Heath, D. K. Henze, M. Sengupta, and C-H Lu, 2023: Improvement of aerosol optical depth data for localized solar resource assessment, **Solar Energy**, 249, 457-466, doi:10.1016/j.solener.2022.11.047.

Chen, S-P, C-H Lu, J. E. Davies, C-F Ou-Yang, N-H Lin, A. K. Huff, B. R. Pierce, S. Kondragunta, J-L Wang, 2023: Infusing satellite data into aerosol forecast for near real-time episode detection and diagnosis in East Asia, **Sci. Total Environ.**, 856, 158797, doi:10.1016/j.scitotenv.2022.158797.

2022

- Grogan, D., C.-H. Lu, S.-W. Wei, S.-P. Chen, 2022: Effects of Saharan Dust on African Easterly Waves: The Impact of Aerosol-Affected Satellite Radiances on Data Assimilation, **Atmos. Chem. Phys.**, 22, 2385–2398, doi://10.5194/acp-22-2385-2022
- Lu, C.-H., Q. Liu, S.-W. Wei, B. T. Johnson, C. Dang, P. G. Stegmann, D. Grogan, G. Ge, and M. Hu, and M. Lueken, 2022: The Aerosol Module in the Community Radiative Transfer Model (v2.2 and v2.3): accounting for aerosol transmittance effects on the radiance observation operator, **Geosci. Model Dev.**, 15, 1317–1329, doi:10.5194/gmd-15-1317-2022
- Wei, S.-W., C.-H. Lu, B. T. Johnson, C. Dang, P. Stegmann, D. Grogan, G. Ge, M. Hu, 2022: The Influence of Aerosols on Satellite Infrared Radiance Simulations and Jacobians: Numerical Experiments of CRTM and GSI. **Remote Sens.**, 14, 683, doi:10.3390/rs14030683

2021

- Couillard, M., M. J. Schwab, J. Schwab, C-H Lu, E. Joseph, B. Stutsrim, B. Shrestha, J. Zhang, T. Knepp, G. Gronoff, 2021: Vertical profiles of ozone concentrations in the lower troposphere downwind of New York City during LISTOS 2018-2019, **J. Geophys. Res.**, Atmospheres, 126, e2021JD035108, doi:10.1029/2021JD035108
- Hung, W.-T., C.-H. Lu, S. Alessandrini, R. Kumar, C.-A. Lin, 2021: The impacts of transported wildfire smoke aerosols on surface air quality in New York State: A multiple-year study using machine learning, **Atmos. Environ.**, 259, 118513, doi:10.1016/j.atmosenv.2021.118513
- Wei, S.-W., C-H Lu, Q. Liu, A. Collard, T. Zhu, D. Grogan, X. Li, J. Wang, R. Grumbine, and P. S. Bhattacharjee, 2021: The impact of aerosols on satellite radiance data assimilation using NCEP global data assimilation system, **Atmos.**, 12, 432. doi: 10.3390/atmos12040432.
- Lin, C.-A., C-H Lu, S-P. Chen, W.-T. Hung, K. Civerolo, O. V. Rattigan, 2021: Characterization of intra-continental smoke transport and impact on New York state air quality using aerosol reanalysis and multi-platform observation, **Atmos. Pollu. Res.**, 12, 154-166, doi: 10.1016/j.apr.2021.01.021.
- Chen, Y.-C., S.-H. Wang, Q. Min, S. Lu, P.-L. Lin, N.-H. Lin, K.-S. Chung, E. Joseph, 2021: Aerosol impacts on warm-cloud microphysics and drizzle in a moderately polluted environment, **Atmos. Chem. Phys.**, 21, 4487-4502, doi:10.5194/acp-21-4487-2021.
- Tang, Y., H. Bian, Z. Tao, L. D. Oman, D. Tong, P. Lee, P. Campbell, B. Baker, C.-H. Lu, L. Pan, J. Wang, J. McQueen, and I. Stajner, 2021: Comparison of Chemical Lateral Boundary Conditions for Air Quality Predictions over the Contiguous United States during Intrusion Events, **Atmos. Chem. Phys.**, 21, 2527-2550, doi:10.5194/acp-21-2527-2021.

2020

- Lance, S., J. Zhang, J. J. Schwab, P. Casson, R. E. Brandt, D. R. Fitzjarrald, M. J. Schwab, J. Sicker, C-H Lu, S-P Chen, J. Yun, J. M. Jeffrey, B. Shrestha, Q. Min, M. Beauharnois, B. Crandall, E. Joseph, M. Brewer, J. R. Minder, D. Orłowski, A. Christiansen, A. G. Carlton, and M. C. Barth, 2020: Overview of the CPOC pilot study at Whiteface Mountain, NY, Cloud Processing of Organics within Clouds (CPOC), **Bull. Amer. Meteor. Soc.**, doi:10.1175/BAMS-D-19-0022.1
- Hung, W.-To., C.-H. Lu, S. Alessandrini, R. Kumar, C.-A. Lin, 2020: Estimation of PM_{2.5} concentrations in New York State: Understanding the influence of vertical mixing on surface PM_{2.5} using machine learning, **Atmos.**, 11, 1303, doi:10.3390/atmos11121303.
- Ninneman, M., S. Lu, X. Zhou, J. Schwab, 2020: On the importance of surface-enhanced re-nitrogenation as an oxides of nitrogen source in rural and urban New York State, **ACS Earth and Space Chem.**, 4, 11, 1985-1992, doi: 10.1021/acsearthspacechem.0c00185.

Hung W.-T., C.-H. Lu, B. Shrestha, H.-C. Lin, C.-A. Lin, D. Grogan, J. Hong, R. Ahmadov, E. James, and E. Joseph E, 2020: The impacts of transported wildfire smoke aerosols on surface air quality in New York State: A case study in summer 2018. **Atmos. Environ.** 227, 177415. doi: 10.1016/j.atmosenv.2020.117415.

2019

Hung, W.-T., C.-H. Lu, S.-H. Wang, S.-P. Chen, F. Tsai, and C. C.-K. Chou, 2019: Investigation of long-range transported PM_{2.5} events over North Taiwan during 2005-2015 winter season, **Atmos. Environ.**, doi:10.1016/j.atmosenv.2019.116920.

2018

Bhattacharjee, P. S., J. Wang, C.-H. Lu, and V. Tallapragada, 2018: The implementation of NEMS GFS Aerosol Component (NGAC) Version 2.0 for global multispecies forecasting at NOAA/NCEP – Part 2: Evaluation of aerosol optical thickness, **Geo. Model Dev.**, 11, 2333-2351, doi:10.5194/gmd-11-2333-2018.

Wang, J., P. S. Bhattacharjee, V. Tallapragada, C.-H. Lu, S. Kondragunta, A. da Silva, X. Zhang, S.-P. Cheng, S.-W. Wei, A. S. Darmenov, J. McQueen, P. Lee, P. Koner, and A. Harris, 2018: The implementation of NEMS GFS Aerosol Component (NGAC) Version 2.0 for global multispecies forecasting at NOAA/NCEP – Part 1: Model description, **Geo. Model Dev.**, 11, 2315-2332, doi:10.5194/gmd-11-2315-2018.

Chen, S.-P., C.-H. Lu, J. McQueen, P. Lee, 2018: Application of satellite observations in conjunction with aerosol reanalysis to characterize long-range transport of African and Asian dust on air quality in the contiguous U.S., **Atmos. Environ.**, doi: 10.1016/j.atmosenv.2018.05.038.

2017

Ninneman, M., S. Lu, P. Lee, J. McQueen, J. Huang, K. Demerjian, and J. Schwab, 2017: Observed and model-derived ozone production efficiency over urban and rural New York State, **Atmosphere**, 126, doi: 10.3390/atmos8070126.

2016

Gu, Y., K. N. Liou, J. H. Jiang, R. Fu., S. Lu., and Y. Xue., 2016: A GCM GCM investigation of impact of aerosols on the precipitation in Amazon during the dry to wet transition, **Clim. Dyn.**, doi:10.1007/s00382-016-3211-7.

Xue, Y, F. De Sales, W. K.-M. Lau, A. Boone, K.-M. Kim, C. R. Mechoso, G. Wang, F. Kucharski, K. Schiro, M. Hosaka, S. Li, L. M. Druryan, I. Seidou Sanda, W. Thiaw, N. Zeng, R. E. Comer, Y.-K. Lim, S. Mahanama, G. Song, Y. Gu, S. M. Hagos, M. Chin, S. Schubert, P. Dirmeyer, L. R. Leung, E. Kalnay, A. Kitoh, C.-H. Lu, N. M. Mahowald, Z. Zhang, 2016: West African monsoon decadal variability and drought and surface-related forcings: Second West African Monsoon Modeling and Evaluation Project Experiment (WAMME II) in the Special Issue "Decadal variability of West African monsoon, external surface forcings, and their modeling". **Clim. Dyn.**, doi: 10.1007/s00382-016-3224-2.

Lee, P., J. McQueen, I. Stajner, J. Huang, L. Pan, D. Tong, H. Kim, Y. Tang, S. Kondragunta, M. Ruminski, S. Lu, E. Rogers, R. Saylor, P. Shafran, H.-C. Huang, J. Gorline, S. Upadhayay, and R. Artz, 2016: NAQFC developmental forecast guidance for fine particulate matter (PM_{2.5}), **Wea Forecasting**, doi: 10.1175/WAF-D-15-0163.1.

Lu, C.-H., A. da Silva, J. Wang, S. Moorthi, M. Chin, P. Colarco, Y. Tang, P. S. Bhattacharjee, S.-P. Chen, H.-Y. Chuang, H.-M. H. Juang, J. McQueen, and M. Iredell, 2016: The implementation of

NEMS GFS Aerosol Component (NGAC) Version 1.0 for global dust forecasting at NOAA/NCEP, **Geo. Model Dev.**, 9, 1–37, doi:10.5194/gmdd-9-1-2016.

2015

Sessions, W. R., J. S. Reid, A. Benedetti, P. R. Colarco, A. da Silva, S. Lu, T. Sekiyama, T.Y. Tanaka, J. M. Baldasano, S. Basart, M. E. Brooks, T. F. Eck, M. Iredell, J. A. Hansen, O. C. Jorba, H.-M. H. Juang, P. Lynch, J.-J. Morcrette, S. Moorthi, J. Mulcahy, Y. Pradhan, M. Razinger, C. B. Sampson, J. Wang, and D. L. Westphal, 2015: Development towards a global operational aerosol consensus: basic climatological characteristics of the International Cooperative for Aerosol Prediction Multi-Model Ensemble (ICAP-MME), **Atmos. Chem. Phys.**, 15, 355-362, doi:10.5194/acp-15-335-2015.

2011

Zhang, Li, P. A. Dirmeyer, J. Wei, Z. Guo, C.-H. Lu, 2011: Land-Atmosphere Coupling Strength in the Global Forecast System, **J. Hydrometeor.**, 12, 147-156, doi: 10.1175/2010JHM1319.1

2009

Lee, P., Y. Tang, D. Kang, J. McQueen, M. Tsidulko, H-C Huang, S. Lu, M. Hart, H-M Lin, S. Yu, G. DiMego, I. Stajner, P. Davidson, 2009: Impact of consistent boundary layer mixing approaches between NAM and CMAQ, **Environ. Fluid Mech.**, 9, 23-42.

Janjic, Z., H Huang, S. Lu, 2009: A unified atmospheric model suitable for studying transport of mineral aerosols from meso to global scale, WMO/GEO Expert Meeting on an International Sand and Dust Storm Warning System, **IOP Conf.Series: Earth and Environmental Science**, 7, 012011doi:10.1088/1755-1307/7/1/012011

2007

De Haan, L. L., M. Kanamitsu, C.-H. Lu, and J. O. Roads, 2007: A comparison of the Noah and OSU Land Surface Models in the NCEP Seasonal Forecast Models, **J. Hydrometeor.**, 8, 1031-1048. Doi: 10.1175/JHM629.1

Li, Z., L. Chiu, S. Weng, D-L Zhang, J. Du, J. Huang, M. Jin, H. Juang, F-C Ko, S. Lu, S. Yang, and D. Yuan, 2007: The rapid growth of publications by atmospheric and oceanic scientists of Chinese origin, **Bull. Amer. Meteor. Soc.**, 846, DOI:10.1175/BAMS-88-6-846

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Guo, Z. et al., 2006: GLACE: The Global Land-Atmosphere Coupling Experiment. Part II: Analysis, **J. Hydrometeor.**, 7, 611-625. DOI: 10.1175/JHM511.1

Koster, R. D. et al., 2006: GLACE: The Global Land-Atmosphere Coupling Experiment. Part I: Overview, **J. Hydrometeor.**, 7, 590-610. DOI: 10.1175/JHM510.1

Seneviratne, S. I., R. D. Koster, Z. Guo, P. A. Dirmeyer, E. Kowalczyk, D. Lawrence, P. Liu, C-H. Lu, D. Mocko, K. W. Oleson, and D. Verseghy, 2006: Soil moisture memory in AGCM simulations: Analysis of Global Land-Atmosphere Coupling Experiment (GLACE) Data, **J. Hydrometeor.**, 7, 1090- 1112. doi:10.1175/JHM533.1

2005

Lu, C-H., M. Kanamitsu, J. O. Roads, W. Ebisuzaki, and K. E. Mitchell, 2005: Evaluation of soil moisture in the NCEP-NCAR and NCEP-DOE global reanalyses, **J. Hydrometeor.**, 6, 391-408. doi: 10.1175/JHM427.1

Yue, G. K., C.-H. Lu, and P.-H. Wang, 2005: Comparing aerosol extinctions measured by SAGE II and III satellite experiments in 2002 and 2003, **J. Geophys. Res.**, 110, D11202, doi:10.1029/2004JD005421.

2004

Koster, R.D, et al., 2004: Regions of strong coupling between soil moisture and precipitation, **Science**, 305, 1138-1140. DOI: 10.1126/science.1100217

2003

Lu, C.-H., G.K. Yue, E.D. Joseph and V.A. Mohnen. 2003: Retrieval analysis of aerosol integral properties from simulated extinction of SAGE II and HALOE wavelengths, **J. Geophys. Res.**, 108, doi: 10.1029/2002JD002453.

Kanamitsu, M., C.-H. Lu, J. Schemm, and W. Ebisuzaki. 2003: The predictability of soil moisture and near-surface temperature in hindcasts of NCEP Seasonal Forecast Model, **J. Clim.**, 16, 510-521. doi: 10.1175/1520-0442(2003)016<0510:TPOSMA>2.0.CO;2

2001

Andreani-Aksoyoglu, A., C.-H. Lu, J. Keller, A. Prevot, and J.S. Chang. 2001: Variability of indicator values for ozone production sensitivity: A model study in Switzerland and San Joaquin Valley (California), **Atmos. Environ.**, 35, 5593-5604, 2001.

2000

Lu, C.-H., G.K. Yue, G.L. Manney, H. Jaeger, and V.A. Mohnen, 2000: Lagrangian approach for SAGE II profile intercomparisons, **J. Geophys. Res.**, 105, 4563-4572.

1998

Lu, C.-H., and J.S. Chang, 1998: On the indicator-based approach to assess ozone sensitivities and emission features, **J. Geophys. Res.**, 103, 3453-3462.

1994

Lu, C.-H., and D.R. Fitzjarrald, 1994: Seasonal and diurnal variations of coherent structures over a deciduous forest, **Boundary Layer Meteor.**, 69, 43-69.