Yunyao Li

Department of Atmospheric, Oceanic and Earth Sciences
George Mason University
Fairfax, VA, 22030
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EDUCATIONS

08/2012-07/2018: University of Maryland, College Park
Ph.D., Atmospheric Science
Advisor: Dr. Kenneth Pickering (NASA Senior Physical Scientist; NASA Emeritus; University of Maryland Research Professor)

09/2008-06/2012: Nanjing University of Information Science & Technology
(Former Nanjing Institute of Meteorology)
B.S., Atmospheric Science

EMPLOYMENT

06/2020-present: Research Scientist
Department of Atmospheric, Oceanic and Earth Sciences, George Mason University, Fairfax, VA, US.
Advisor: Dr. Daniel Tong (GMU/NOAA/UMD)

08/2019-06/2020: Postdoc Fellow
Earth System Science Interdisciplinary Center, University of Maryland, College Park, MD, U.S.
Advisor: Dr. Daniel Tong (GMU/NOAA/UMD)

07/2018-05/2019: Postdoc Fellow
Department of Atmospheric and Oceanic Science, University of Maryland, College Park, MD, U.S.
Advisor: Dr. Kayo Ide (UMD), Dr. Daryl Kleist (NOAA), Dr. Steve Fletcher (CSU)

SELECTED AWARDS

05/2017: Ann Wylie Green Fund Scholarship Award.
01/2016: American Meteorological Society 18th Conference on Atmospheric Chemistry Outstanding Student Platform Presentation Award
04/2011: Meritorious Winner in Mathematical Contest in Modeling (MCM)
11/2010 & 11/2009: National Scholarship Award

PEER-REVIEWED PUBLICATIONS

Li, Y., Tong, D. Q., Ngan, F., Cohen, M. D., Stein, A. F., Kondragunta, S., et al. (2020). Ensemble PM2.5 forecasting during the 2018 Camp Fire event using the HYSPLIT transport and dispersion model. *J. Geophys. Res. Atmos*: Atmospheres, 125, e2020JD032768. https://doi.org/10.1029/2020JD032768

Li, Y., Ide, K., and Kleist, D. T. (2020) Evaluating the Impact of Stochastically Perturbed Physics Tendencies (SPPT) Parameter Tuning on the Model Ensemble Spread in the Global Data Assimilation System (GDAS), (in preparation)

Li, Y., Pickering, K.E., Barth, M.C., Bela, M.M., Cummings, K.A., and Allen, D.J. (2020). Cloud parameterized downwind ozone production of the 29 May 2012 Kingfisher supercell during DC3 Field Campaign, *J. Geophys. Res. Atmos.* (in preparation)

Cummings, K.A., Pickering, K.E., Barth, M. C., Bela**,** M. M., **Li**, **Y.,** Allen, D.J., Bruning, E., MacGorman, D.R., Ziegler, C., Biggerstaff, M., Fuchs, B., Davis, T., Carey, L., Mecikalski, R., and Finney, D. L. (2020), Evaluation of lightning flash rate parameterizations in a cloud resolved WRF simulation of the 29-30 May 2012 Oklahoma severe supercell system observed during DC3, *J. Geophys. Res. Atmos.* (Under review)

Li, Y., Pickering, K.E., Barth, M.C., Bela, M.M., Cummings, K.A., and Allen, D.J. (2019). Wet Scavenging in WRF-Chem Simulations of Parameterized Convection for a Severe Storm during the DC3 Field Campaign, *J. Geophys. Res. Atmos. 124*, 7413–7428. https://doi.org/10.1029/2019JD030484.

Li, Y., Pickering, K.E., Barth, M.C., Bela, M.M., Cummings, K.A., and Allen, D.J. (2018). Evaluation of Parameterized Convective Transport of Trace Gases in Simulation of Storms Observed During the DC3 Field Campaign. *J. Geophys. Res. Atmos*. *123*, 11,238-11,261.

Bela, M.M., Barth, M.C., Toon, O.B., Fried, A., Ziegler, C., Cummings, K.A., **Li, Y.**, Pickering, K.E., Homeyer, C.R., Morrison, H., et al. (2018). Effects of Scavenging, Entrainment, and Aqueous Chemistry on Peroxides and Formaldehyde in Deep Convective Outflow Over the Central and Southeast United States. *J. Geophys. Res. Atmos. 123*, 7594–7614.

Li, Y., Pickering, K.E., Allen, D.J., Barth, M.C., Bela, M.M., Cummings, K.A., Carey, L.D., Mecikalski, R.M., Fierro, A.O., Campos, T.L., et al. (2017). Evaluation of deep convective transport in storms from different convective regimes during the DC3 field campaign using WRF-Chem with lightning data assimilation. *J. Geophys. Res. Atmos. 122*, 2017JD026461.

Bela, M.M., Barth, M.C., Toon, O.B., Fried, A., Homeyer, C.R., Morrison, H., Cummings, K.A., **Li, Y.**, Pickering, K.E., Allen, D.J., et al. (2016). Wet scavenging of soluble gases in DC3 deep convective storms using WRF-Chem simulations and aircraft observations. *J. Geophys. Res. Atmos. 121*, 2015JD024623.

Fried, A., Barth, M. c., Bela, M., Weibring, P., Richter, D., Walega, J., **Li, Y.**, Pickering, K., Apel, E., Hornbrook, R., et al. (2016). Convective transport of formaldehyde to the upper troposphere and lower stratosphere and associated scavenging in thunderstorms over the central United States during the 2012 DC3 study. *J. Geophys. Res. Atmos*. *121*, 2015JD024477.

Selected Conference Presentations

Li, Y., Tong, D., Ngan, F., Cohen, M.D., Stein, A.F., Kondragunta, S., Zhang, X., Ichuko, C., Hyer, E.J., Kahn, R.A. (2019), Ensemble Forecast of PM2.5 during the 2018 Camp Fire Event Using the HYSPLIT Transport and Dispersion Model, 2019 Cooperative Institute for Satellite Earth System Studies (CISESS) Science Meeting, November, College Park, MD. (Oral)

Li, Y., Pickering, K. E., Barth, M. C., Bela, M. M., Cummings, K. A., and Allen, D. J. (2019), Improvement of parameterized convective transport and wet scavenging of trace gases in the WRF-Chem model, Meteorology and Climate - Modeling for Air Quality Conference, September, Davis, CA. (Oral)

Li, Y., Pickering, K. E., Barth, M. C., Bela, M. M., Cummings, K. A., Allen, D. J., and Fierro, A. O. (2018), Wet Scavenging in Cumulus-Parameterized WRF-Chem Simulations of a Supercell Storm during the DC3 Field Campaign, American Geophysical Union Annual Meeting, December, Washington, D.C. (Poster)

Li, Y. (2018), Deep Convective Transport and Wet Scavenging of Trace gases. George Washington University-Johns Hopkins University-University of Maryland Students/Postdoc Fluid Symposium, May, Washington, D.C. (Invited talk)

Li, Y., Pickering, K. E., Barth, M. C., Bela, M. M., Cummings, K. A., Allen, D. J., and Fierro, A. O (2017), Deep convective transport in cumulus-parameterized and cloud-resolved WRF-Chem simulations of an MCS and storms from different convective regimes during the DC3 Field campaign, American Geophysical Union Annual Meeting, December, New Orleans, LA. (Poster)

Li, Y., Pickering, K. E., Barth, M. C., Bela, M. M., Cummings, K. A., Allen, D. J., Carey, L. D., Mecikalski, R. M., and Fierro, A. O. (2016), Comparison of deep convective transport in cumulus-parameterized and cloud-resolved WRF-Chem simulations of different scale storms during the DC3 field campaign, American Geophysical Union Annual Meeting, December, San Francisco, CA. (Oral)

Li, Y., Pickering, K. E., Barth, M. C., Bela, M. M., Cummings, K. A., Allen, D. J., Carey, L. D., Mecikalski, R. M., and Fierro, A. O. (2016), WRF-Chem simulation of deep convective transport in different scale storms using lightning data assimilation, 17th WRF Users' Workshop, June, Boulder, CO. (Oral)

Li, Y., Pickering, K. E., Barth, M. C., Bela, M. M., Cummings, K. A., Allen, D. J., Carey, L. D., Mecikalski, R. M., Fierro, A. O., Mullendore, G. (2016), Deep Convective Transport In Convective Systems Of Three Different Scales From The DC3 Field Campaign Using Results From WRF-Chem Simulations With Lightning Data Assimilation, 96th American Meterological Society Annual Meeting, January, New Orleans, LA. (Oral)

Li, Y., Pickering, K. E., Barth, M. C., Bela, M. M., Cummings, K. A., Allen, D. J., Carey, Diskin, G. S., Campos, T. L., and Fierro, A. O., (2014). An Analysis of Deep Convective Transport in the May 21, 2012 DC3 Alabama Thunderstorms using Results from WRF-Chem Simulations. AGU annual meeting, December, San Francisco, CA. (Poster)