

Dr. Bing Lin

Education

- Ph.D.: Atmospheric Sci., Columbia Univ., New York, New York, 1995
M.S.: Atmospheric Sci., Columbia Univ., New York, New York, 1992
M.Engin.: EE, Institute of Electronics, Chinese Academy of Science, Beijing, China, 1986
B.S.: Electrical Engineering, Univ. Sci. and Tech. of China, Hefei, China, 1983

Experience

- Senior Scientist: Science Directorate, NASA Langley, 2003-present
Scientist: Science Directorate, NASA Langley, 2000-2003
Assist. Res. Prof.: Atmos. Sci., Hampton Univ., Hampton, Virginia, 1997-2000
Research Associate: Appl. Phys., College of William & Mary, Williamsburg, 1995-1997

Dr. Lin is a senior research scientist in the Science Directorate, NASA Langley Research Center. He is/was a PI and Co-I for many NASA and other agency's projects such as CERES and an integration team member for the NASA Energy and Water Cycle Study program. He has served as the project scientist for NASA ACT-America and Langley ASCENDS missions. His interests include remote sensing of the atmosphere, ocean and land with expertise on atmospheric radiation, radiative forcing, climate feedbacks, retrievals of cloud, water vapor and precipitation properties, combined visible-infrared-microwave data analysis, remote sensing technology development, CO₂ measurements, air-sea interaction, land surface properties, and radiative transfer. He authored/co-authored 80+ peer-reviewed journal articles and has multiple US patents. Dr. Lin received the NASA Langley James D. Lawrence Award for most outstanding atmospheric science publication and the NASA Exceptional Achievement Medal in 2003.

Selected Recent Peer-Reviewed Publications:

- Lin, B., and Z. Liu, Martian atmospheric CO₂ and pressure profiling with differential absorption lidar: System consideration and simulation results, submitted to the journal of the Earth and Space Science, 2021.
- Davis, K., and coauthors, The Atmospheric Carbon and Transport (ACT) - America Mission, submitted to the *Bulletin of the American Meteorological Society*, 2021.
- Baker, D., E. Bell, S. Basu, S. Kulawik, C. O'Dell, K. Davis, J. Campbell, B. Lin, and J. Dobler, Calculating an error correlation length scale from MFL-OCO₂ differences and using it to average OCO-2 data, submitted to the journal of Geoscientific Model Development (GMD), 2020.
- Wei, Y., and coauthors, Atmospheric Carbon and Transport - America (ACT-America) Datasets: Description, Management, and Delivery, submitted to the journal of the Earth and Space Science, 2020.
- Lin, B., Y. Hu, and Q. Min, Assessing surface air pressure sensing using high frequency O₂-absorption radar system, accepted by JQSRT, 2020.
- Campbell, J., B. Lin, E. Browell, M. Obland, J. Dobler, W. Erxleben, D. McGregor, C. O'Dell, E. Bell, S. Pal, B. Weir, T. Fan, S. Kooi, A. Corbett, K. Davis, I. Gordon, R. Kochanov, Field Evaluation of Column CO₂ Retrievals from Intensity-Modulated Continuous-Wave Differential Absorption Lidar Measurements during ACT-America, *Earth and Space Science*, 2020 (DOI: 10.1029/2019EA000847).
- Bell, E., C. O'Dell, K. Davis, S. Pal, B. Lin, S. Kooi, T. Fan, J. Campbell, E. Browell, J. Dobler, W. Erxleben, B. Weir, and S. Denning, Evaluation of OCO-2 XCO₂ Variability at Local

- and Synoptic Scales using Lidar and In Situ Observations from the ACT-America Campaign, *Journal of Geophysical Research: Atmospheres*, 125, e2019JD031400. <https://doi.org/10.1029/2019JD031400>, 2020.
- Pal, S., K. Davis, T. Lauvaux, E.V. Browell, B. Gaudet, D. Stauffer, M. Obland, Y. Choi, J. DiGangi, Sha Feng, B. Lin, N. Miles, R. Pauly, S. Richardson, and Fuqing Zhang, Observations of Greenhouse Gas Changes across Summer Frontal Boundaries in the Eastern United States, *Journal of Geophysical Research: Atmospheres*, 125, e2019JD030526. <https://doi.org/10.1029/2019JD030526>, 2020.
- Lin, B., and Q. Min, Optimal frequency selection of multi-channel O₂-band differential absorption barometric radar for air pressure measurements, *Journal of Quantitative Spectroscopy & Radiative Transfer (JQSRT)*, 188, 188–191, 2017. (<http://dx.doi.org/10.1016/j.jqsrt.2016.06.019>).
- L'Ecuyer, T., H. K. Beaudoin, M. Rodell, W. Olson, B. Lin, S. Kato, C. A. Clayson, E. Wood, J. Sheffield, R. Adler, G. Huffman, M. Bosilovich, G. Gu, F. Robertson, P. R. Houser, D. Chambers, J. S. Famiglietti, E. Fetzer, W. T. Liu, X. Gao, C. A. Schlosser, E. Clark, D. P. Lettenmaier, K. Hilburn, The Observed State of the Energy Budget in the Early 21st Century, *J. Climate*, DOI: 10.1175/JCLI-D-14-00556.128, 8319- 8344, 2015.
- Lin, B., A. Nehrir, F. Harrison, E. Browell, S. Ismail, M. Obland, J. Campbell, J. Dobler, B. Meadows, T. Fan, and S. Kooi, Atmospheric CO₂ column measurements in cloudy conditions using intensity-modulated continuous-wave lidar at 1.57 micron, *Optics Express*, 23, DOI:10.1364/OE.23.00A582, A582 – A593, 2015.
- Min, Q., W. Gong, B. Lin, and Y. Hu, Application of Surface Pressure Measurements of O₂-band Differential Absorption Radar System in Three-Dimensional Data Assimilation on Hurricane: Part II — A Study Using the Observational Data, *JQSRT*, 150, 166-174, 2015b.
- Min, Q., W. Gong, B. Lin, and Y. Hu, Application of Surface Pressure Measurements of O₂-band Differential Absorption Radar System in Three-Dimensional Data Assimilation on Hurricane: Part I — An Observing System Simulation Experiments Study, *JQSRT*, 150, 148-165, 2015a.
- Campbell, J., B. Lin, A. Nehrir, F.W. Harrison, M. Obland, Super-resolution technique for CW lidar using Fourier transform reordering and Richardson–Lucy deconvolution, *Optics Letters*, 39, 6981-6984, 2014.
- Campbell, J., B. Lin, A. Nehrir, F.W. Harrison, M. Obland, Binary phase shift keying on orthogonal carriers for multi-channel CO₂ absorption measurements in the presence of thin clouds, *Optics Express*, 22, DOI:10.1364/OE.22.0A1634, A1634 – A1640, 2014.
- Lin, B., S. Ismail, F. Harrison, E. Browell, A. Nehrir, J. Dobler, B. Moore, T. Refaat, and S. Kooi, Modeling of Intensity-Modulated Continuous-Wave Laser Absorption Spectrometer Systems for Atmospheric CO₂ Column Measurements, *Applied Optics*, 52, 7062-7077, 2013.
- Dong, X., B.J. Zib, B. Xi, R. Stanfield, Y. Deng, X. Zhang, B. Lin, and C. Long, Critical Mechanisms for the Formation of Extreme Arctic Sea-Ice Extent in the Summers of 2007 and 1996, *Climate Dynamics*, DOI:10.1007/s00382-013-1920-8, 2013.
- Dobler, J., F. Harrison, E. Browell, B. Lin, D. McGregor, S. Kooi, Y. Choi, and S. Ismail, Atmospheric CO₂ column measurements with an airborne intensity-modulated continuous-wave 1.57-micron fiber laser lidar, *Applied Optics*, 52, 2874-2892, 2013.
- Lin, B., P. Stackhouse, Jr., W. Sun, Y. Hu, Z. Liu, and T.-F. Fan, Is Oklahoma getting drier? *JQSRT*, 122, 208-213, 2013.