

List of publications Dr. Laura Bianco

Publications on International books:

- **Bianco, L.**, D. Cimini, F.S. Marzano, R. Ware, 2008: "An Example of Integration of UHF Wind Profiler and Microwave Radiometer", COST Action 720 Final Report, Engelbart, Monna, Nash and Matzler Eds, pp. 213-221, 2008.
- **Bianco, L.**, 2010: "Introduction to SODAR and RASS-Wind Profiler Radar Systems", Integrated Ground-Based Observing Systems - Applications for Climate, Meteorology, and Civil Protection, Cimini, Visconti and Marzano Eds., Springer, ISBN 978-3-642-12967-1, DOI: 10.1007/978-3-642-12968-1, pp. 89-105, 2010.

Peer-reviewed publications:

- **Bianco, L.**, and J. M. Wilczak, 2002: Convective boundary layer depth: Improved measurements by Doppler radar wind profiler using fuzzy logic methods, *J. Atmos. Ocean. Tech.*, 19, 1745–1758, [https://doi.org/10.1175/1520-0426\(2002\)019<1745:CBLDIM>2.0.CO;2](https://doi.org/10.1175/1520-0426(2002)019<1745:CBLDIM>2.0.CO;2).
- **Bianco, L.**, D. Cimini, F. S. Marzano, and R. Ware, 2005: Combining microwave radiometer and wind profiler radar measurements for high-resolution atmospheric humidity profiling, *J. Atmos. Ocean. Tech.*, 22, 949–965, <https://doi.org/10.1175/JTECH1771.1>.
- Gaffard, C., **L. Bianco**, V. Klaus, and M. Matabuena, 2006: Evaluation of moments calculated from wind profiler spectra: A comparison between five different processing techniques, *Meteorologische Zeitschrift*, 15, 1, 73–85, <https://doi.org/10.1127/0941-2948/2006/0101>.
- Klaus, V., **L. Bianco**, C. Gaffard, M. Matabuena, and T. Hewison, 2006: Combining UHF radar wind profiler and microwave radiometer for the estimation of atmospheric humidity profiles, *Meteorologische Zeitschrift*, 15, 1, 87–97, <https://doi.org/10.1127/0941-2948/2006/0102>.
- **Bianco, L.**, B. Tomassetti, E. Coppola, A. Fracassi, M. Verdecchia, and G. Visconti, 2006: Thermally driven circulation in a region of complex topography: Comparison of wind-profiling radar measurements and MM5 numerical predictions, *Annales Geophysicae*, 24, 6, 1537–1549, <https://doi.org/10.5194/angeo-24-1537-2006>.
- **Bianco, L.**, J. M. Wilczak, and A. B. White, 2008: Convective Boundary Layer Depth Estimation from Wind Profilers: Statistical comparison between an automated algorithm and expert estimations, *J. Atmos. Ocean. Tech.*, 25, 1397–1413, <https://doi.org/10.1175/2008JTECHA981.1>.
- Chuanfeng, Z., A. E. Andrews, **L. Bianco**, J. Eluszkiewicz, A. Hirsch, C. MacDonald, T. Nehrkorn, and M. L. Fischer, 2009: Atmospheric inverse estimates of methane emissions from Central California, *J. Geophys. Res.*, 114, Article Number: D16302, DOI: 10.1029/2008JD011671.
- Wilczak, J. M., I. Djalalova, S. McKeen, **L. Bianco**, J.-W. Bao, G. Grell, S. Peckham, R. Mathur, J. McQueen, and P. Lee, 2009: Analysis of regional meteorology and surface ozone during the TexAQS II field program and an evaluation of the NMM-CMAQ and WRF-Chem air

quality models, *J. Geophys. Res.*, 114, Article Number: D00F14,
<https://doi.org/10.1029/2008JD011675>.

- Lee, S.-H., S.-W. Kim, W. M. Angevine, **L. Bianco**, S. A. McKeen, C. J. Senff, M. Trainer, S. C. Tucker, and R. J. Zamora, 2011: Evaluation of urban surface parameterizations in the WRF model using measurements during the Texas Air Quality Study 2006 field campaign, *Atmos. Chem. Phys.*, 11, 2127–2143, <https://doi.org/10.5194/acp-11-2127-2011>.
- **Bianco, L.**, J.-W. Bao, C. W. Fairall, and S. A. Michelson, 2011: Impact of sea-spray on the atmospheric surface layer, *Boundar.-Layer Meteorol.*, 140, 361–381, <https://doi.org/10.1007/s10546-011-9617-1>.
- **Bianco, L.**, I. V. Djalalova, C. W. King, and J. M. Wilczak, 2011: Diurnal evolution and annual variability of boundary-layer height and its correlation to other meteorological variables in California's Central Valley, *Boundar.-Layer Meteorol.*, 140, 491–511, <https://doi.org/10.1007/s10546-011-9622-4>.
- Kim, S.-W., S. A. McKeen, G. J. Frost, S.-H. Lee, M. Trainer, A. Richter, W. M. Angevine, E. Atlas, **L. Bianco**, F. K. Boersma, J. Brioude, J. P. Burrows, J. de Gouw, A. Fried, J. Gleason, S. te Lintel Hekkert, A. Hilboll, J. Mellqvist, J. Peischl, D. Richter, C. Rivera, T. Ryerson, J. Walega, C. Warneke, P. Weibring, and E. Williams, 2011: Evaluations of NO_x and highly reactive VOC emission inventories in Texas and their implications for ozone plume simulations during the Texas Air Quality Study 2006, *Atmos. Chem. Phys.* 11, 11361–11386, <https://doi.org/10.5194/acp-11-11361-2011>.
- Bao, J.-W., C. W. Fairall, S. A. Michelson, and **L. Bianco**, 2011: Parameterizations of sea-spray impact on the air-sea momentum and heat fluxes, *Mon. Wea. Rev.*, 139, 3781–3797. DOI: 10.1175/MWR-D-11-00007.1.
- Jeong, S., C. Zhao, A. E. Andrews, **L. Bianco**, J. M Wilczak, and M. L. Fischer, 2012: Seasonal variation of CH₄ emissions from Central California, *J. Geophys. Res.*, 117, Article Number: D11306, <https://doi.org/10.1029/2011JD016896>.
- Angevine, W. M., L. Eddington, K. Durkee, C. W. Fairall, **L. Bianco**, and J. Brioude, 2012: Meteorological model evaluation for CalNex 2010, *Mon. Wea. Rev.*, 140, 3885–3906 <https://doi.org/10.1175/MWR-D-12-00042.1>.
- Jeong, S., C. Zhao, A. E. Andrews, E. Dlugokencky, C. Sweeney, **L. Bianco**, J. M. Wilczak, and M. L. Fischer, 2012: Seasonal variations in N₂O emissions from Central California, *Geophys. Res. Lett.*, 39, Article Number: L16805, <https://doi.org/10.1029/2012GL052307>.
- **Bianco, L.**, D. Gottas, and J. M. Wilczak, 2013: Implementation of a Gabor transform data quality control algorithm for UHF wind profiling radars, *J. Atmos. Ocean. Tech.*, 30, 2697–2703, <https://doi.org/10.1175/JTECH-D-13-00089.1>.
- Jeong, S., Y.-K. Hsu, A. E. Andrews, **L. Bianco**, P. Vaca, J. M. Wilczak, and M. L. Fischer, 2013: A Multi-tower Measurement Network Estimate of California's Methane Emissions, *J. Geophys. Res.-Atmosphere*, 118, 339–351, <https://doi.org/10.1002/jgrd.50854>.
- Allabakash, S., P. Yasodha, **L. Bianco**, S. Venkatramana Reddy, and P. Srinivasulu, 2015: Improved Moments Estimation for VHF Active Phased Array Radar using Fuzzy Logic Method, *J. Atmos. Ocean. Tech.*, 32, 5, 1004–1014, <https://doi.org/10.1175/JTECH-D-14-00075.1>.

- Wilczak, J. M., C. Finley, J. Freedman, J. Cline, **L. Bianco**, J. Olson, I. V. Djalalova, L. Sheridan, M. Ahlstrom, J. Manobianco, J. Zack, J. Carley, R. Coulter, L. Berg, J. Mirocha, S. Benjamin, and M. Marquis, 2015: The Wind Forecast Improvement Project (WFIP): A Public-Private Partnership Addressing Wind Energy Forecast Needs, *Bull. Am. Meteor. Soc.*, 96, 1699–1718, <https://doi.org/10.1175/BAMS-D-14-00107.1>.
- Djalalova, I. V., J. Olson, J. Carley, **L. Bianco**, J. M. Wilczak, Y. Pichugina, R. Banta, M. Marquis, and J. Cline, 2016: POWER experiment: impact of assimilation of a network of coastal wind profiling radars on simulating offshore winds in and above the wind turbine layer, *Weather and Forecasting*, 31, 1071–1091, <https://doi.org/10.1175/WAF-D-15-0104.1>.
- **Bianco**, L., I. V. Djalalova, J. M. Wilczak, J. Cline, S. Calvert, E. Konopleva-Akish, C. Finley, and J. Freedman, 2016: A Wind Energy Ramp Tool and Metric for Measuring the Skill of Numerical Weather Prediction Models, *Weather and Forecasting*, 31, 1157–1177, <https://doi.org/10.1175/WAF-D-15-0144.1>.
- Jeong, S., Y.-K. Hsu, S. Newman, J. Zhang, A. E. Andrews, **L. Bianco**, J. Bagley, X. Cui, H. Graven, J. Kim, P. Salameh, B. W. LaFranchi, C. Priest, M. Campos-Pineda, E. Novakovskaia, C. D. Sloop, H. A. Michelsen, R. P. Bambha, R. F. Weiss, R. Keeling, and M. L. Fischer, 2016: Estimating methane emissions in California's urban and rural regions using multi-tower observations, *J. Geophys. Res.-Atmosphere*, 121, 13031–13049, <https://doi.org/10.1002/2016JD025404>.
- Lundquist, J. K., J. M. Wilczak, R. Ashton, **L. Bianco**, W. A. Brewer, A. Choukulkar, A. Clifton, M. Debnath, R. Delgado, K. Friedrich, S. Gunter, A. Hamidi, G. V. Iungo, A. Kaushik, B. Kosović, P. Langan, A. Lass, E. Lavin, J. C.-Y. Lee, K. L. McCaffrey, R. K. Newsom, D. C. Noone, S. P. Oncley, P. T. Quelet, S. P. Sandberg, J. L. Schroeder, W. J. Shaw, L. Sparling, C. St. Martin, A. St. Pe, E. Strobach, K. Tay, B. J. Vanderwende, A. Weickmann, D. Wolfe, and R. Worsnop, 2017: Assessing state-of-the-art capabilities for probing the atmospheric boundary layer: the XPIA field campaign, *Bull. Am. Meteor. Soc.*, 98, 289–314, <https://doi.org/10.1175/BAMS-D-15-00151.1>.
- Bagley, J. E., S. Jeong, X. Cui, S. Newman, J. Zhang, C. Priest, M. Campos-Pineda, A. E. Andrews, **L. Bianco**, M. Lloyd, N. Lareau, C. Clements, and M. L. Fischer, 2017: Assessment of an atmospheric transport model for annual inverse estimates of California greenhouse gas emissions, *J. Geophys. Res.-Atmosphere*, 122, 1901–1918, <https://doi.org/10.1002/2016JD025361>.
- Choukulkar, A., A. Brewer, S. Sandberg, A. Weickmann, T. A. Bonin, R. M. Hardesty, J. K. Lundquist, R. Delgado, G. V. Iungo, R. Ashton, M. Debnath, **L. Bianco**, J. M. Wilczak, S. Oncley, and D. Wolfe, 2017: Evaluation of Single- and Multiple-Doppler Lidar Techniques to Measure Complex Flow during the XPIA Field Campaign, *Atmos. Meas. Tech.*, 10, 247–264, <https://doi.org/10.5194/amt-10-247-2017>.
- McCaffrey, K., **L. Bianco**, P. Johnston, and J. M. Wilczak, 2017: A comparison of vertical velocity variance measurements from wind profiling radars and sonic anemometers, *Atmos. Meas. Tech.*, 10, 999–1015, <https://doi.org/10.5194/amt-10-999-2017>.
- **Bianco**, L., K. Friedrich, J. M. Wilczak, D. Hazen, D. Wolfe, R. Delgado, S. Oncley, and J. K. Lundquist, 2017: Assessing the accuracy of microwave radiometers and radio acoustic

sounding systems for wind energy applications, *Atmos. Meas. Tech.*, 10, 1707–1721, DOI:10.5194/amt-10-1707-2017.

- McCaffrey, K., **L. Bianco**, and J. M. Wilczak, 2017: Improved observations of turbulence dissipation rates from wind profiling radars, *Atmos. Meas. Tech.*, 10, 2595–2611, <https://doi.org/10.5194/amt-10-2595-2017>.
- Schwietzke, S., G. Pétron, S. Conley, C. Pickering, I. Mielke-Maday, E. Dlugokencky, P. P. Tans, T. Vaughn, C. Bell, D. Zimmerle, S. Wolter, C. W. King, A. B. White, T. Coleman, **L. Bianco**, and R. C. Schnell, 2017: Improved mechanistic understanding of natural gas methane emissions from spatially-resolved aircraft measurements, *Environ. Sci. Technol.*, 51(12), 7286–7295, DOI: 10.1021/acs.est.7b01810.
- Allabakash, S., P. Yasodha, L. Bianco, S. Venkatramana Reddy, P. Srinivasulu, and S. Lim 2017: Improved boundary layer height measurement using a fuzzy logic method: Diurnal and seasonal variabilities of the convective boundary layer over a tropical station, *J. Geophys. Res.-Atmosphere*, 122, 9211–9232, <https://doi.org/10.1002/2017JD027615>.
- Pichugina, Y., R. Banta, J. Olson, J. Carley, M. Marquis, A. Brewer, J. Wilczak, I. Djalalova, **L. Bianco**, E. James, S. Benjamin, and J. Cline, 2017: Assessment of NWP forecast models in simulating offshore winds through the lower boundary layer by measurements from a ship-based scanning Doppler lidar, *Mon. Wea. Rev.*, 145, 4277–4301, <https://doi.org/10.1175/MWR-D-16-0442.1>.
- Banta, R. M., Y. L. Pichugina, W. A. Brewer, E. James, J. B. Olson, S. G. Benjamin, J. Carly, **L. Bianco**, I. Djalalova, J. M. Wilczak, R. M. Hardesty J. Cline, and M. Marquis, 2017: Evaluating and Improving NWP Forecast Models for the Future: How the Needs of Offshore Wind Energy Can Point the Way, *Bull. Am. Meteor. Soc.*, 99, 1155–1176. <https://doi.org/10.1175/BAMS-D-16-0310.1>.
- Jeong, S., S. Newman, J. Zhang, A. E. Andrews, **L. Bianco**, E. Dlugokencky, J. Bagley, X. Cui, C. Priest, M. Campos-Pineda, and M. L. Fischer, 2018: Inverse estimation of an annual cycle of California's nitrous oxide emissions, *J. Geophys. Res.-Atmosphere*, 123, 4758–4771, <https://doi.org/10.1029/2017JD028166>.
- Wilczak, J. M., J. Olson, I. Djalalova, **L. Bianco**, L. Berg, W. Shaw, R. Coulter, R. M. Eckman, J. Freedman, C. Finley, and J. Cline, 2019: Data assimilation impact of tall towers, wind turbine nacelle anemometers, sodars and wind profiling radars on wind velocity and power forecasts during the first Wind Forecast Improvement Project (WFIP), *Wind Energy*, 22(7), 932–944, <https://doi.org/10.1002/we.2332>.
- Akish, E., **L. Bianco**, I. V. Djalalova, J. M. Wilczak, J. Olson, J. Freedman, C. Finley, and J. Cline, 2019: Measuring the Impact of Additional Instrumentations on the Skill of Numerical Weather Prediction Models at Forecasting Wind Ramp Events during the first Wind Forecast Improvement Project (WFIP), *Wind Energy*, 22(9), 1165–1174, <https://doi.org/10.1002/we.2347>.
- Wilczak, J. M., M. Stoelinga, L. Berg, J. Sharp, C. Draxl, K. McCaffrey, R. M. Banta, **L. Bianco**, I. Djalalova, J. K. Lundquist, P. Muradyan, A. Choukulkar, L. Leo, T. Bonin, Y. Pichugina, R. Eckman, C. Long, K. Lantz, R. Worsnop, J. Bickford, N. Bodini, D. Chand, A. Clifton, J. Cline, D. Cook, H. J. S. Fernando, K. Friedrich, R. Krishnamurthy, M. Marquis, J. McCaa, J. Olson, S. Otarola-Bustos, G. Scott, W. J. Shaw, S. Wharton, and A. B. White, 2019: The second Wind

- Forecast Improvement Project (WFIP2): Observational field campaign. Bull. Amer. Meteorol. Society, 100(9), 1701–1723, <https://doi.org/10.1175/BAMS-D-18-0035.1>.
- Cui, Y., A. Vijayan, M. Falk, Y.-K. Hsu, D. Yin, X. Chen, Z. Zhao, J. Avise, Y. Chen, K. Verhulst, R. Duren, V. Yadav, C. Miller, R. Weiss, R. Keeling, J. Kim, L. Iraci, T. Tanaka, M. Johnson, E. Kort, **L. Bianco**, M. Fischer, K. Stroud, J. Herner, and B. Croes, 2019: A multi-platform inversion estimation of statewide and regional methane emissions in California during 2014–2016, Environ. Sci. Technol., 53, 16, 9636–9645, <https://doi.org/10.1021/acs.est.9b01769>.
 - **Bianco**, L., I. V. Djalalova, J. M. Wilczak, J. B. Olson, J. S. Kenyon, A. Choukulkar, L. K. Berg, H. J. S. Fernando, E. P. Grimit, R. Krishnamurthy, J. K. Lundquist, P. Muradyan, M. Pekour, Y. Pichugina, M. T. Stoelinga, and D. D. Turner, 2019: Impact of model improvements on 80 m wind speeds during the second Wind Forecast Improvement Project (WFIP2), Geosci. Model Dev., 12, 4803–4821, <https://doi.org/10.5194/gmd-12-4803-2019>.
 - Olson, J. B., J. S. Kenyon, I. Djalalova, **L. Bianco**, D. D. Turner, Y. Pichugina, A. Chokulkar, M. D. Toy, J. M Brown, W. Angevine, E. Akish, J. -W. Bao, P. Jimenez, B. Kosović, K. A. Lundquist, C. Draxl, J. K. Lundquist, J. McCaa, K. McCaffrey, K. Lantz, C. Long, J. Wilczak, R. Banta, M. Marquis, S. Redfern, L. K. Berg, W. Shaw, and J. Cline, 2019: Improving wind energy forecasting through numerical weather prediction model development, Bull. Amer. Meteorol. Soc., 100, 2201–2220, <https://doi.org/10.1175/BAMS-D-18-0040.1>.
 - McCaffrey, K., J. M. Wilczak, **L. Bianco**, E. Grimit, J. Sharp, R. Banta, K. Friedrich, H. J. S. Fernando, R. Krishnamurthy, L. Leo, and P. Muradyan, 2019: Identification and Characterization of Persistent Cold Pools from Temperature and Wind Profilers in the Columbia River Basin, J. of Appl. Meteor. Climatol., 58, 2533–2551, <https://doi.org/10.1175/JAMC-D-19-0046.1>.
 - Pichugina, Y., R. Banta, W. Brewer, **L. Bianco**, C. Draxl, J. Kenyon, J. Lundquist, J. Olson, D. Turner, S. Wharton, J. Wilczak, S. Baidar, L. Berg, H. Fernando, B. McCarty, R. Rai, B. Roberts, J. Sharp, W. Shaw, M. Stoelinga, and R. Worsnop, 2020: Evaluating the WFIP2 updates to the HRRR model using scanning Doppler lidar measurements in the complex terrain of the Columbia River Basin, Journal of Renewable and Sustainable Energy, 12, 043301, <https://doi.org/10.1063/5.0009138>
 - Pétron, G., B. Miller, B. Vaughn, E. Thorley, J. Kofler, I. Mielke-Maday, O. Sherwood, E. Dlugokencky, B. Hall, S. Schwietzke, S. Conley, J. Peischl, P. Lang, E. Moglia, M. Crotwell, A. Crotwell, C. Sweeney, T. Newberger, S. Wolter, S. Basu, **L. Bianco**, C. King, T. Coleman, A. White, M. Rhodes, B. Vanderwende, P. Tans and R. Schnell, 2020: Investigating large methane enhancements in the United States San Juan Basin, Elementa, 8 (1): 038, <https://doi.org/10.1525/elementa.038>.
 - Djalalova, I. V., **L. Bianco**, E. Akish, J. M. Wilczak, J. B. Olson, J. S. Kenyon, L. K. Berg, A. Choukulkar, R. Coulter, H. J. S. Fernando, E. Grimit, R. Krishnamurthy, J. K. Lundquist, P. Muradyan, D. D. Turner, and S. Wharton, 2020: Wind ramp events validation in NWP forecast models during the second Wind Forecast Improvement Project (WFIP2) using the Ramp Tool and Metric (RT&M), Wea. Forecasting, 35 (6), 2407–2421, <https://doi.org/10.1175/WAF-D-20-0072.1>.

- Darby, L. S., C. J. Senff, R. J. Alvarez II, R. M. Banta, **L. Bianco**, D. Helmig, and A. B. White, 2021: The spatial variability of ozone along the Colorado Front Range occurring over two days with contrasting summertime terrain-driven flows, *Elementa: Science of the Anthropocene*, 9 (1): 00146, <https://doi.org/10.1525/elementa.2020.00146>.
- Adler, B., J. M. Wilczak, **L. Bianco**, I. Djalalova, J. B. Duncan Jr., D. D. Turner, 2021: Observational case study of a persistent cold air pool and gap flow in the Columbia River Basin, *J. of Appl. Meteor. Climatol.*, 60, 1071–1090, <https://doi.org/10.1175/JAMC-D-21-0013.1>.
- **Bianco, L.**, P. Muradyan, I. Djalalova, J. M. Wilczak, J. B. Olson, J. S. Kenyon, R. Kotamarthi, K. Lantz, C. Long, D. D. Turner, 2021: Comparison of observations and predictions of daytime planetary boundary-layer heights and surface meteorological variables in the Columbia River Gorge and Basin during the second Wind Forecast Improvement Project, *Boundary-Layer Meteorol.*, <https://doi.org/10.1007/s10546-021-00645-x>.
- Djalalova, I. V., D. D. Turner, **L. Bianco**, J. M. Wilczak, J. Duncan, B. Adler, and D. Gottas, 2022: Improving thermodynamic profile retrievals from microwave radiometer by including radio acoustic sounding system (RASS) observations, *Atmos. Meas. Tech.*, 15, 521–537, <https://doi.org/10.5194/amt-15-521-2022>.
- Duncan J. B. Jr., **L. Bianco**, B. Adler, T. Bell, I. Djalalova, L. Riihimaki, J. Sedlar, E. N. Smith, D. D. Turner, T. J. Wagner, and J. M. Wilczak, 2022: Evaluating daytime planetary boundary-layer height estimations resolved by both active and passive remote sensing instruments during the CHEESEHEAD19 field campaign, *Atmos. Meas. Tech.*, 15, 2479–2502, <https://doi.org/10.5194/amt-15-2479-2022>.
- Sedlar, J., L. D. Riihimaki, D. D. Turner, J. Duncan, **L. Bianco**, B. Adler, K. Lantz, and J. Wilczak, 2022: Investigating the impacts of daytime boundary layer clouds on surface energy fluxes and boundary layer structure during CHEESEHEAD19, accepted for publication to *JGR-Atmos*.
- Bianca A., J. M. Wilczak, J. Kenyon, **L. Bianco**, I. V. Djalalova, J. B. Olson, and D. D. Turner, 2023: Evaluation of a cloudy cold-air pool in the Columbia River Basin in different versions of the HRRR model, submitted to EGUsphere [preprint], <https://doi.org/10.5194/egusphere-2022-355>.