

Publications

Wayne M. Angevine

January 8, 2021

Refereed publications:

Angevine, W.M., S.K. Avery, W.L. Ecklund, and D.A. Carter, 1993: Fluxes of heat and momentum measured with a boundary layer wind profiler radar/RASS. *J. Appl. Meteorol.*, **32**, 73-80.

Angevine, W.M., S.K. Avery, and G.L. Kok, 1993: Virtual heat flux measurements from a boundary layer profiler/RASS compared to aircraft measurements. *J. Appl. Meteorol.*, **32**, 1901-1907.

Angevine, W.M., A.B. White, and S.K. Avery, 1994: Boundary layer depth and entrainment zone characterization with a boundary layer profiler. *Boundary Layer Meteorol.*, **68**, 375-385.

Angevine, W.M., W.L. Ecklund, D.A. Carter, K.S. Gage, and K.P. Moran, 1994: Improved radio-acoustic sounding techniques. *J. Atmos. Oceanic Technol.*, **11**, 42-49.

Angevine, W.M., and W.L. Ecklund, 1994: Errors in radio acoustic sounding of temperature. *J. Atmos. Oceanic Technol.*, **11**, 837-848.

Angevine, W.M., R.J. Doviak, and Z. Sorbjan, 1994: Remote sensing of vertical velocity variance and surface heat flux in a convective boundary layer. *J. Appl. Meteorol.*, **33**, 977-983.

Angevine, W.M., and J.I. MacPherson, 1995: Comparison of wind profiler and aircraft wind measurements at Chebogue Point, Nova Scotia. *J. Atmos. Oceanic Technol.*, **12**, 421-426.

Montzka, S.A., M. Trainer, W.M. Angevine, and F.C. Fehsenfeld, 1995: Measurements of 3-methyl furan, methyl vinyl ketone, and methacrolein at a rural forested site in the southeastern United States. *J. Geophys. Res.*, **100**, 11,393-11,403.

Carter, D.A., K.S. Gage, W.L. Ecklund, W.M. Angevine, P.E. Johnston, A.C. Riddle, J. Wilson, and C.R. Williams, 1995: Developments in UHF lower tropospheric wind profiling at NOAA's Aeronomy Laboratory. *Radio Sci.*, **30**, 977-1001.

Peters, G., and W.M. Angevine, 1996: On the correction of RASS-temperature errors due to turbulence. *Contributions to Atmospheric Physics*, **69**, 81-96.

Riddle, A.C., W.M. Angevine, W.L. Ecklund, E.R. Miller, D.B. Parsons, D.A. Carter, and K.S. Gage, 1996: In situ and remotely sensed horizontal winds and temperature intercomparisons obtained using Integrated Sounding Systems during TOGA COARE. *Contributions to Atmospheric Physics*, **69**, 49-62.

Angevine, W.M., M.P. Buhr, J.S. Holloway, M. Trainer, D.D. Parrish, J.I. MacPherson, G.L. Kok, R.D. Schillawski, and D.H. Bowlby, 1996: Local meteorological features affecting chemical measurements at a North Atlantic coastal site. *J. Geophys. Res.*, **101**, 28,935-28,946.

Angevine, W.M., M. Trainer, S.A. McKeen, and C.M. Berkowitz, 1996: Mesoscale meteorology of the New England coast, Gulf of Maine, and Nova Scotia: Overview. *J. Geophys. Res.*, **101**, 28,893-28,902.

Angevine, W.M., 1997: Errors in mean vertical velocities measured by boundary layer wind profilers. *J. Atmos. Oceanic. Technol.*, **14**, 565-569.

Angevine, W.M., P.S. Bakwin, and K.J. Davis, 1998: Wind profiler and RASS measurements compared with measurements from a 450 m tall tower. *J. Atmos. Oceanic. Technol.*, **15**, 818-825.

Angevine, W.M., A.W. Grimsdell, L.M. Hartten, and A.C. Delany, 1998: The Flatland boundary layer experiments. *Bull. Amer. Meteorol. Soc.*, **79**, 419-431.

Grimsdell, A.W., and W.M. Angevine, 1998: Convective boundary layer height measured with wind profilers and compared to cloud base. *J. Atmos. Oceanic Technol.*, **15**, 1332-1339.

Angevine, W.M., A.W. Grimsdell, S.A. McKeen, and J.M. Warnock, 1998: Entrainment results from the Flatland boundary layer experiments. *J. Geophys. Res.*, **103**, 13689-13702.

Angevine, W.M., 1999: Entrainment results including advection and case studies from the Flatland boundary layer experiments. *J. Geophys. Res.*, **104**, 30947-30963.

Baumann, K., E.J. Williams, W.M. Angevine, J.M. Roberts, R.B. Norton, G.J. Frost, F.C. Fehsenfeld, S.R. Springston, S.B. Bertman, and B. Hartsell, 2000: Ozone production and transport near Nashville, Tennessee: Results from the 1994 study at New Hendersonville. *J. Geophys. Res.*, **105**, 9137-9153.

Cohn, S.A., and W.M. Angevine, 2000: Boundary layer height and entrainment zone thickness measured by lidars and wind profiling radars. *J. Appl. Meteorol.*, **39**, 1233-1247.

Angevine, W.M., and K. Mitchell, 2001: Evaluation of the NCEP mesoscale Eta model convective boundary layer for air quality applications. *Mon. Wea. Rev.*, **129**, 2761-2775.

Angevine, W.M., H. Klein Baltink, and F.C. Bosveld, 2001: Observations of the morning transition of the convective boundary layer. *Boundary-Layer Meteorol.*, **101**, 209-227.

Grimsdell, A.W., and W.M. Angevine, 2002: Observations of the afternoon transition of the convective boundary layer. *J. Appl. Meteorol.*, **41**, 3-11.

LeMone, M.A., R.L. Grossman, R.T. McMillen, K.-N. Liou, S.C. Ou, S.A. McKeen, W.M. Angevine, K. Ikeda, and F. Chen, 2002: Cases-97: Late-morning warming and moistening of the convective mixed layer over the Walnut River watershed. *Boundary-Layer Meteorol.*, **104**, 1-52.

Darby, L.S., R.M. Banta, W.A. Brewer, W.D. Neff, R.D. Marchbanks, B.J. McCarty, C.J. Senff, A.B. White, W.M. Angevine, and E.J. Williams, 2002: Vertical variations in O₃ concentrations before and after a gust front passage, *J. Geophys. Res.*, **107(D13)**, 4176, doi:10.1029/2001JD000996.

White, A.B., B.D. Templeman, W.M. Angevine, R.J. Zamora, C.W. King, C.A. Russell, R.M. Banta, W.A. Brewer, and K.J. Olszyna, 2002: Regional contrasts in morning transitions observed during the 1999 Southern Oxidants Study Nashville/Middle Tennessee Intensive. *J. Geophys. Res.*, **107(D23)**, 4726, doi:10.1029/2001JD002036.

Stroud, C.A., J.M. Roberts, E.J. Williams, D. Hereid, W.M. Angevine, F.C. Fehsenfeld, A. Wisthaler, A. Hansel, M. Martinez-Harder, and H. Harder, 2002: Nighttime isoprene trends at an urban forested site during the 1999 Southern Oxidant Study. *J. Geophys. Res.*, **107**, ACH 7, doi:10.1029/2001JD000959.

Angevine, W.M., C.J. Senff, and E.R. Westwater, 2002: Boundary Layers/Observational techniques -- Remote. *Encyclopedia of Atmospheric Sciences*, J.R. Holton, J. Pyle, and J.A. Curry, Eds., Academic Press, 271-279.

Angevine, W.M., A.B. White, C.J. Senff, M. Trainer, and R.M. Banta, 2003: Urban-rural contrasts in mixing height and cloudiness over Nashville in 1999. *J. Geophys. Res.*, **108(D3)**, doi:10.1029/2001JD001061.

Wert, B.P., and coauthors, 2003: Signatures of terminal alkene oxidation in airborne formaldehyde measurements during TexAQS 2000. *J. Geophys. Res.*, **108(D3)**, 4104, doi:10.1029/2002JD2502.

Ryerson, T.B., and coauthors, 2003: Effect of petrochemical industrial emissions of reactive alkenes and NO_x on tropospheric ozone formation in Houston, Texas. *J. Geophys. Res.*, **108(D8)**, doi:10.1029/2002JD003070.

Angevine, W.M., C.J. Senff, A.B. White, E.J. Williams, J. Koermer, S.T.K. Miller, R. Talbot, P.E. Johnston, S.A. McKeen, and T. Downs, 2004: Coastal boundary layer influence on pollutant transport in New England. *J. Appl. Meteorol.*, **43**, 1425-1437.

Brown, S.S., and coauthors, 2004: Nighttime removal of NO_x in the summer marine boundary layer. *Geophys. Res. Lett.*, **31**, L07108, doi:10.1029/2004GL019412.

Angevine, W.M., 2005: An integrated turbulence scheme for boundary layers with shallow cumulus applied to pollutant transport. *J. Appl. Meteorol.*, **44**, 1436-1452.

Angevine, W.M., M. Tjernström, and M. Zagar, 2006: Modeling of the coastal boundary layer and pollutant transport in New England. *J. Appl. Meteorol.*, **45**, 137-154.

Angevine, W. M., J. E. Hare, C. W. Fairall, D. E. Wolfe, R. J. Hill, W. A. Brewer, and A. B. White, 2006: Structure and formation of the highly stable marine boundary layer over the Gulf of Maine. *J. Geophys. Res.*, **111**, D23S22, doi:10.1029/2006JD007465.

Fairall, C. W., L. Bariteau, A. A. Grachev, R. J. Hill, D. E. Wolfe, W. A. Brewer, S. C. Tucker, J. E. Hare, and W. M. Angevine, 2006: Turbulent bulk transfer coefficients and ozone deposition velocity in the International Consortium for Atmospheric Research into Transport and Transformation. *J. Geophys. Res.*, **111**, D23S20, doi:10.1029/2006JD007597.

Brown, S.S., W.P. Dube, H.D. Osthoff, D.E. Wolfe, W.M. Angevine, and A.R. Ravishankara, 2007: High resolution vertical distributions of NO₃ and N₂O₅ through the nocturnal boundary layer. *Atmos. Chem. Phys.*, **7**, 139-149.

Nielsen-Gammon, J.W., R.T. McNider, W.M. Angevine, A.B. White, and K. Knupp, 2007: Mesoscale model performance with assimilation of wind profiler data: Sensitivity to assimilation parameters and network configuration. *J. Geophys. Res.*, **112**, D09121, doi:10.1029/2006JD007633.

Brown, S.S., Dube, W.P., Osthoff, H.D., Stutz, J., Ryerson, T.B., Wollny, A.G., Brock, C.A., Warneke, C., De Gouw, J.A., Atlas, E.,

Neuman, J.A., Holloway, J.S., Lerner, B.M., Williams, E.J., Kuster, W.C., Goldan, P.D., Angevine, W.M., Trainer, M., Fehsenfeld, F.C., Ravishankara, A.R., 2007: Vertical profiles in NO₃ and N₂O₅ measured from an aircraft: Results from the NOAA P-3 and surface platforms during the New England Air Quality Study 2004. *J. Geophys. Res.*, **112**, D22304, doi:10.1029/2007JD008883.

White A. B., L. S. Darby, C. J. Senff, C. W. King, R. M. Banta, J. Koermer, J. M. Wilczak, P. J. Neiman, W. M. Angevine, R. Talbot (2007), Comparing the impact of meteorological variability on surface ozone during the NEAQS (2002) and ICARTT (2004) field campaigns, *J. Geophys. Res.*, **112**, D10S14, doi:10.1029/2006JD007590.

Nielsen-Gammon, J.W., C.L. Powell, M.J. Mahoney, W.M. Angevine, C. Senff, A.B. White, C. Berkowitz, C. Doran, and K. Knupp, 2008: Multisensor estimation of mixing heights over a coastal city. *J. Appl. Meteorol.*, **47**, 27-43.

Angevine, W.M., 2008: Transitional, entraining, cloudy, and coastal boundary layers. *Acta Geophysica*, **56**, 2-20.

Bates, T.S., P.K. Quinn, D. Coffman, K. Schulz, D.S. Covert, J.E. Johnson, E.J. Williams, B.M. Lerner, W.M. Angevine, S.C. Tucker, W.A. Brewer, and A. Stohl, 2008: Boundary layer aerosol chemistry during TexAQS/GoMACCS 2006: Insights into aerosol sources and transformation processes. *J. Geophys. Res.*, **113**, D00F01, doi:10.1029/2008JD010023.

Angevine, W.M., H. Jiang, and T. Mauritsen, 2010: Performance of an eddy diffusivity - mass flux scheme for shallow cumulus boundary layers. *Monthly Weather Review*, **138**, 2895-2912, doi:10.1175/2010MWR3142.1.

Banta, R.M., C.J. Senff, R.J. Alvarez, A.O. Langford, D.D. Parrish, M.K. Trainer, L.S. Darby, R.M. Hardesty, B. Lambeth, J.A. Neuman, W.M. Angevine, J. Nielsen-Gammon, S.P. Sandberg, and A.B. White, 2011: Dependence of daily peak O₃ concentrations near Houston, Texas on environmental factors: Wind speed, temperature, and boundary-layer depth. *Atmospheric Environment*, **45**, 162-173.

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. *Atmospheric Chemistry and Physics*, **11**, 2127-2143, doi:10.5194/acp-11-2127-2011.

Svensson, G., A.A.M. Holtslag, V. Kumar, T. Mauritsen, G.J. Steeneveld, W. M. Angevine, E. Bazile, A. Beljaars, E.I.F. de Bruijn, A. Cheng, L. Conangla, J. Cuxart, M. Ek, M. J. Falk, F. Freedman, H. Kitagawa, V. E. Larson, A. Lock, J. Mailhot, V. Masson, S. Park, J. Pleim, S. Söderberg, W. Weng and M. Zampieri, 2011: Evaluation of the diurnal cycle in the atmospheric boundary layer over land as represented by a variety of single column models - the second GABLS experiment. *Boundary-Layer Meteorol.*, **140**, 177-206, doi: 10.1007/s10546-011-9611-7.

Brioude, J., S.-W. Kim, W. M. Angevine, G. J. Frost, S.-H. Lee, S. A. McKeen, M. K. Trainer, F. C. C. Fehsenfeld, J. Holloway, T. B. Ryerson, E. J. Williams, G. Petron, and J. D. Fast, 2011: Top-down estimate of anthropogenic emission inventories and their interannual variability in Houston using a mesoscale inverse modeling technique. *J. Geophys. Res.*, **116**, D20305, doi:10.1029/2011JD016215.

Washenfelder, R. A., et al., 2011: The glyoxal budget and its contribution to organic aerosol for Los Angeles, California, during CalNex 2010. *J. Geophys. Res.*, **116**, D00V02, doi:10.1029/2011JD016314.

Kim, S.-W., McKeen, S. A., Frost, G. J., Lee, S.-H., Trainer, M., Richter, A., Angevine, W. M., Atlas, E., Bianco, L., Boersma, K. F., Brioude, J., Burrows, J. P., de Gouw, J., Fried, A., Gleason, J., Hilboll, A., Mellqvist, J., Peischl, J., Richter, D., Rivera, C., Ryerson, T., te Lintel Hekkert, S., Walega, J., Warneke, C., Weibring, P., and Williams, E., 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, doi:10.5194/acp-11-11361-2011.

Cooper, O. R., et al., 2011: Measurement of western U.S. baseline ozone from the surface to the tropopause and assessment of downwind impact regions. *J. Geophys. Res.*, **116**, D00V03, doi:10.1029/2011JD016095.

Ryerson, T.B., K.C. Aikin, W.M. Angevine, E.L. Atlas, D.R. Blake, C.A. Brock, F.C. Fehsenfeld, R.S. Gao, J.A. de Gouw, D.W. Fahey, J.S. Holloway, D.A. Lack, R.A. Lueb, S. Meinardi, A.M. Middlebrook, D.M. Murphy, J.A. Neuman, J.B. Nowak, D.D. Parrish, J. Peischl, A.E. Perring, I.B. Pollack, A.R. Ravishankara, J.M. Roberts, J.P. Schwarz, J.R. Spackman, H. Stark, C. Warneke, and L.A. Watts, 2011: Atmospheric emissions from the Deepwater Horizon spill constrain air-water partitioning, hydrocarbon fate, and leak rate, *Geophysical Research Letters*, **38**(L07803), doi:10.1029/2011GL046726.

Brioude, J., Petron, G., Frost, G. J., Ahmadov, R., Angevine, W.M., Hsie, E.-Y., Kim, S.-W., Lee, S.-H., McKeen, S. A., Trainer, M., Fehsenfeld, F. C., Holloway, J. S., Peischl, J., Ryerson, T. B., Gurney, K. R., 2012: A new inversion method to calculate emission inventories without a prior at mesoscale: Application to the anthropogenic CO₂ emission from Houston, Texas. *J. Geophys. Res.*, **117**, D05312, doi:10.1029/2011JD016918.

Metcalf, A. R., J. S. Craven, J. J. Ensberg, J. Brioude, W. M. Angevine, A. Sorooshian, H. T. Duong, H. H. Jonsson, R. C. Flagan, and J. H. Seinfeld, 2012: Black carbon aerosol over the Los Angeles Basin during CalNex. *J. Geophys. Res.*, **117**, D00V13, doi:10.1029/2011JD017255.

Angevine, W.M., Eddington, L., Durkee, K., Fairall, C., Bianco, L., and Brioude, J., 2012: Meteorological model evaluation for CalNex 2010. *Monthly Weather Review*, **140**, 3885-3906, doi:10.1175/MWR-D-12-00042.1

Brioude, J., Angevine, W. M., McKeen, S. A., and Hsie, E.-Y., 2012: Numerical uncertainty at mesoscale in a Lagrangian model in complex terrain. *Geosci. Model Dev.*, **5**, 1127-1136, doi:10.5194/gmd-5-1127-2012.

Ensberg, J.J., Craven, J.S., Metcalf, A.R., Angevine, W.M., Bahreini, R., Brioude, J., Cai, C., de Gouw, J.A., Ellis, R.A., Flynn, J.H., Haman, C.L., Hayes, P.L., Jimenez, J.L., Lefer, B.L., Middlebrook, A.M., Murphy, J.G., Neuman, J.A., Nowak, J.B., Roberts, J.M., Stutz, J., Veres, P.R., Walker, J.M., and Seinfeld, J.H., 2012: Inorganic and black carbon aerosols in the Los Angeles Basin during CalNex. *J. Geophys. Res.*, **117**, doi:10.1029/2012JD018136

Neuman, J.A., Trainer, M., Aikin, K.C., Angevine, W.M., Brioude, J., Brown, S.S., de Gouw, J.A., Dube, W.P., Flynn, J.H., Graus, M., Holloway, J.S., Lefer, B.L., Nedelec, P., Nowak, J.B., Parrish, D.D., Pollack, I.B., Roberts, J.M., Ryerson, T.B., Smit, H., Thouret, V., and Wagner, N.L., 2012: Observations of ozone transport from the free troposphere to the Los Angeles basin. *J. Geophys. Res.-Atmos.*, **117**, doi: 10.1029/2011JD016919.

Wagner, N.L., Riedel, T.P., Roberts, J.M., Thornton, J.A., Angevine, W.M., Williams, E.J., Lerner, B.M., Vlasenko, A., Li, S.M., Dube, W.P., Coffman, D.J., Bon, D.M., de Gouw, J.A., Kuster, W.C., Gilman, J.B., and Brown, S.S., 2012: The sea breeze/land breeze circulation in Los Angeles and its influence on nitryl chloride production in this region. *J. Geophys. Res.-Atmos.*, **117**, D00V24, doi: 10.1029/2012JD017810.

Hacker, J.P., and Angevine, W.M., 2013: Ensemble Data Assimilation to Characterize Surface-Layer Errors In Numerical Weather Prediction Models. *Monthly Weather Review*, in press.

Kort, E. A., Angevine, W.M., Duren, R., and Miller, C.E., 2013: Surface observations for monitoring urban fossil fuel CO₂ emissions: Minimum site location requirements for the Los Angeles megacity. *J. Geophys. Res. Atmos.*, **118**, doi:10.1002/jgrd.50135.

Brioude, J., Angevine, W. M., Ahmadov, R., Kim, S.-W., Evan, S., McKeen, S. A., Hsie, E.-Y., Frost, G. J., Neuman, J. A., Pollack, I. B., Peischl, J., Ryerson, T. B., Holloway, J., Brown, S. S., Nowak, J. B., Roberts, J. M., Wofsy, S. C., Santoni, G. W., Oda, T., and Trainer, M., 2013: Top-down estimate of surface flux in the Los Angeles Basin using a mesoscale inverse modeling technique: assessing anthropogenic emissions of CO, NO_x and CO₂ and their impacts. *Atmos. Chem. Phys.*, **13**, 3661-3677, doi:10.5194/acp-13-3661-2013.

Angevine, Wayne M., Jerome Brioude, Stuart McKeen, John S. Holloway, Brian M. Lerner, Allen H. Goldstein, Abhinav Guha, Arlyn Andrews, John B. Nowak, Stephanie Evan, Marc L. Fischer, Jessica B. Gilman and Daniel Bon, 2013: Pollutant transport among California regions. *J. Geophys. Res.*, **118**, 6750-6763, doi:10.1002/jgrd.50490.

Ryerson, T.B., A. E. Andrews, W. M. Angevine, T. S. Bates, C. A. Brock, B. Cairns, R. C. Cohen, O. R. Cooper, J. A. de Gouw, F. C. Fehsenfeld, R. A. Ferrare, M. L. Fischer, R. C. Flagan, A. H. Goldstein, J. W. Hair, R. M. Hardesty, C. A. Hostetler, J. L. Jimenez, A. O. Langford, E. McCauley, S. A. McKeen, L. T. Molina, A. Nenes, S. J. Oltmans, D. D. Parrish, J. R. Pederson, R. B. Pierce, K. Prather, P. K. Quinn, J. H. Seinfeld, C. J. Senff, A. Sorooshian, J. Stutz, J. D. Surratt, M. Trainer, R. Volkamer, E. J. Williams and S. C. Wofsy, 2013: The 2010 California Research at the Nexus of Air Quality and Climate Change (CalNex) field study. *J. Geophys. Res.*, **118**, 5830-5866, doi:10.1002/jgrd.50331.

Hayes, P. L., et al., 2013: Organic aerosol composition and sources in Pasadena, California during the 2010 CalNex campaign. *J. Geophys. Res. Atmos.*, **118**, 9233-9257, doi:10.1002/jgrd.50530.

Brioude, J., Arnold, D., Stohl, A., Cassiani, M., Morton, D., Seibert, P., Angevine, W., Evan, S., Dingwell, A., Fast, J. D., Easter, R. C., Pisso, I., Burkhardt, J., and Wotawa, G., 2013: The Lagrangian particle dispersion model FLEXPART-WRF version 3.1. *Geosci. Model Dev.*, **6**, 1889-1904, doi:10.5194/gmd-6-1889-2013.

Ensberg, J.J., Craven, J.S., Metcalf, A.R., Allan, J.D.,

Angevine, W.M., Bahreini, R., Brioude, J., Cai, C., Coe, H., de Gouw, J.A., Ellis, R.A., Flynn, J.H., Haman, C.L., Hayes, P.L., Jimenez, J.L., Lefer, B.L., Middlebrook, A.M., Murphy, J.G., Neuman, J.A., Nowak, J.B., Roberts, J.M., Stutz, J., Taylor, J.W., Veres, P.R., Walker, J.M., Seinfeld, J.H., 2013: Inorganic and black carbon aerosols in the Los Angeles Basin during CalNex. *J. Geophys. Res. Atmos.*, **118**, 1777-1803, doi:10.1029/2012JD018136.

Gentner, D.R., Ford, T.B., Guha, A., Boulanger, K., Brioude, J., Angevine, W.M., de Gouw, J.A., Warneke, C., Gilman, J.B., Ryerson, T.B., Peischl, J., Meinardi, S., Blake, D.R., Atlas, E., Lonneman, W.A., Kleindienst, T.E., Beaver, M.R., Clair, J.M. St., Wennberg, P.O., VandenBoer, T.C., Markovic, M.Z., Murphy, J.G., Harley, R.A., and Goldstein, A.H., 2014: Emissions of organic carbon and methane from petroleum and dairy operations in California's San Joaquin Valley. *Atmos. Chem. Phys.*, **14**, 4955-4978, doi:10.5194/acp-14-4955-2014.

Bosveld, F., Baas, P., Steeneveld, G.-J., Holtslag, A. M., Angevine, W., Bazile, E., de Bruijn, E. F., Deacu, D., Edwards, J., Ek, M., Larson, V., Pleim, J., Raschendorfer, M., and Svensson, G., 2014: The Third GABLS Intercomparison Case for Evaluation Studies of Boundary-Layer Models. Part B: Results and Process Understanding. *Boundary-Layer Meteorology*, **152**, 157-187, doi:10.1007/s10546-014-9919-1.

Gentner, D. R., E. Ormeño, S. Fares, T. B. Ford, R. Weber, J.-H. Park, J. Brioude, W. M. Angevine, J. F. Karlik, and A. H. Goldstein, 2014: Emissions of terpenoids, benzenoids, and other biogenic gas-phase organic compounds from agricultural crops and their potential implications for air quality. *Atmos. Chem. Phys.*, **14**, 5393-5413.

Lothon, M., Lohou, F., Pino, D., Couvreux, F., Pardyjak, E. R., Reuder, J., Vilà-Guerau de Arellano, J., Durand, P., Hartogensis, O., Legain, D., Augustin, P., Gioli, B., Lenschow, D. H., Faloon, I., Yagüe, C., Alexander, D. C., Angevine, W. M., Bargain, E., Barrié, J., Bazile, E., Bezombes, Y., Blay-Carreras, E., van de Boer, A., Boichard, J. L., Bourdon, A., Butet, A., Campistron, B., de Coster, O., Cuxart, J., Dabas, A., Darbieu, C., Deboudt, K., Delbarre, H., Derrien, S., Flament, P., Fourmentin, M., Garai, A., Gibert, F., Graf, A., Groebner, J., Guichard, F., Jiménez, M. A., Jonassen, M., van den Kroonenberg, A., Magliulo, V., Martin, S., Martinez, D., Matorrillo, L., Moene, A. F., Molinos, F., Moulin, E., Pietersen, H. P., Piguet, B., Pique, E., Román-Cascón, C., Rufin-Soler, C., Saïd, F., Sastre-Marugán, M., Seity, Y., Steeneveld, G. J., Toscano, P., Traullé, O., Tzanos, D., Wacker, S., Wildmann, N., and Zaldei, A., 2014: The BLLAST field experiment: Boundary-Layer Late

Afternoon and Sunset Turbulence. *Atmos. Chem. Phys.*, **14**, 10931-10960, doi:10.5194/acp-14-10931-2014.

Angevine, W.M., E. Bazile, D. Legain, and D. Pino, 2014: Land surface spinup for episodic modeling. *Atmos. Chem. Phys.*, **14**, 8165-8172, doi:10.5194/acp-14-8165-2014.

Angevine, W.M., J. Brioude, S. McKeen, and J. S. Holloway, 2014: Uncertainty in Lagrangian pollutant transport simulations due to meteorological uncertainty from a mesoscale WRF ensemble. *Geosci. Model Dev.*, **7**, 2817-2829.

Wagner, N. L., Brock, C. A., Angevine, W. M., et al., 2015: In situ vertical profiles of aerosol extinction, mass, and composition over the southeast United States during SENEX and SEAC4RS: observations of a modest aerosol enhancement aloft. *Atmos. Chem. Phys.*, **15**, 7085-7102, doi:10.5194/acp-15-7085-2015.

Cui, Y.Y., J. Brioude, S.A. McKeen, W.M. Angevine, S.W. Kim, G.J. Frost, R. Ahmadov, J. Peischl, N. Bousserez, Z. Liu, T.B. Ryerson, S.C. Wofsy, G.W. Santoni, E.A. Kort, M.L. Fischer and M. Trainer, 2015: Top-down estimate of methane emissions in California using a mesoscale inverse modeling technique: The South Coast Air Basin. *J. Geophys. Res.-Atmos.*, **120** (13), 6698-6711, issn: 2169-897X, ids: CN8MN, doi: 10.1002/2014JD023002

Pithan, F., W. Angevine, and T. Mauritsen, 2015: Improving a global model from the boundary layer: Total turbulent energy and the neutral limit Prandtl number. *J. Adv. Model. Earth Syst.*, **7** (2), 791-805, issn: 1942-2466, ids: CQ7ZH, doi: 10.1002/2014MS000382

McDuffie, E.E., P.M. Edwards, J.B. Gilman, B.M. Lerner, W.P. Dube, M. Trainer, D.E. Wolfe, W.M. Angevine, J. deGouw, E.J. Williams, A.G. Tevlin, J.G. Murphy, E.V. Fischer, S. McKeen, T.B. Ryerson, J. Peischl, J.S. Holloway, K. Aikin, A.O. Langford, C.J. Senff, R.J. Alvarez, S.R. Hall, K. Ullmann, K.O. Lantz and S.S. Brown, 2016: Influence of oil and gas emissions on summertime ozone in the Colorado Northern Front Range. *J. Geophys. Res.-Atmos.*, **121**, 8712-8729, doi: 10.1002/2016JD025265.

Pithan, F, A. Ackerman, W.M. Angevine, K. Hartung, L. Ickes, M. Kelley, B. Medeiros, I. Sandu, G.J. Steeneveld, H.A.M. Sterk, G. Svensson, P.A. Vaillancourt and A. Zadra, 2016: Select strengths and biases of models in representing the Arctic winter boundary layer over sea ice: the Larcform 1 single column model intercomparison. *J. Adv. Model. Earth Syst.*, **8**, 1345-1357, doi: 10.1002/2016MS000630.

Cui, YY, J. Brioude, W.M. Angevine, J. Peischl, S.A. McKeen, S.-W. Kim, J.A. Neuman, D.K. Henze, N. Bousseres, M.L. Fischer, S. Jeong, H.A. Michelsen, R.P. Bambha, Z. Liu, G.W. Santoni, B.C. Daube, E.A. Kort, G.J. Frost, T.B. Ryerson, S.C. Wofsy and M. Trainer, 2017: Top-down estimate of methane emissions in California using a mesoscale inverse modeling technique: The San Joaquin Valley. *J. Geophys. Res.-Atmos.*, **122** (6) 3686-3699, issn: 2169-897X, ids: ES6KC, [doi: 10.1002/2016JD026398](https://doi.org/10.1002/2016JD026398)

Neggers, R.A.J., A.S. Ackerman, W.M. Angevine, E. Bazile, I. Beau, P.N. Blossey, I.A. Boutle, C. de Bruijn, A. Cheng, J. van der Dussen, J. Fletcher, S. Dal Gesso, A. Jam, H. Kawai, S.K. Cheedela, V.E. Larson, M.P. Lefebvre, A.P. Lock, N.R. Meyer, S.R. de Roode, W. de Rooy, I. Sandu, H. Xiao and K.M. Xu, 2017: Single-Column Model Simulations of Subtropical Marine Boundary-Layer Cloud Transitions Under Weakening Inversions. *J. Adv. Model. Earth Syst.*, **9** (6) 2385-2412, issn: 1942-2466, ids: FR8DF, [doi: 10.1002/2017MS001064](https://doi.org/10.1002/2017MS001064)

Angevine, W.M., J. Olson, J. Kenyon, W.I. Gustafson Jr., S. Endo, K. Suselj, and D.D. Turner, 2018: Shallow cumulus in WRF parameterizations evaluated against LASSO large-eddy simulations. *Monthly Weather Review*, **146**, 4303-4322, doi: 10.1175/MWR-D-18-0115.1

Cui, Y. Y., Henze, D. K., Brioude, J., Angevine, W. M., Liu, Z., Bousseres, N., Guerrette, J., McKeen, S., Peischl, J., Yuan, B., Ryerson, T., Frost, G., and Trainer, M., 2019: Inversion estimates of lognormally distributed methane emission rates from the Haynesville-Bossier oil and gas production region using airborne measurements. *Journal of Geophysical Research: Atmospheres*, **124**, 3520-3531, [doi: 10.1029/2018JD029489](https://doi.org/10.1029/2018JD029489)

Olson, J.B., Kenyon, J.S., Angevine, W.M., Brown, J.M., Pagowski, M., and Suselj, K., 2019: A description of the MYNN-EDMF scheme and the coupling to other components in WRF-ARW. NOAA Technical Memorandum OAR GSD-61, doi:10.25923/n9wm-be49

Olson, J.B., J.S. Kenyon, I. Djalalova, L. Bianco, D.D. Turner, Y. Pichugina, A. Choukulkar, M.D. Toy, J.M. Brown, W.M. Angevine, E. Akish, J. Bao, P. Jimenez, B. Kosovic, 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. Meteor. Soc.*, **100**, 2201-2220, <https://doi.org/10.1175/BAMS-D-18-0040.1>

Angevine, W.M., J.M. Edwards, M. Lothon, M.A. LeMone, and S.R.

Osborne, 2020: Transition periods in the diurnally-varying atmospheric boundary layer over land. *Boundary-Layer Meteorology*, **177**, 205-223, <https://doi.org/10.1007/s10546-020-00515-y>

Angevine, W.M., Peischl, J., Crawford, A., Loughner, C.P., Pollack, I.B., and Thompson, C.R., 2020: Errors in top-down estimates of emissions using a known source. *Atmos. Chem. Phys.*, **20**, 11855-11868, <https://doi.org/10.5194/acp-20-11855-2020>

Angevine, W.M., J. Olson, J. J. Gristey, I. Glenn, G. Feingold, and D. D. Turner, 2020: Scale Awareness, Resolved Circulations, and Practical Limits in the MYNN-EDMF Boundary Layer and Shallow Cumulus Scheme. *Mon. Wea. Rev.*, **148**, 4629-4639, <https://doi.org/10.1175/MWR-D-20-0066.1>.

LeMone, M.A., W.M. Angevine, and J. Dudhia, 2020: The role of radiation in heating the clear-air convective boundary layer: Revisiting CASES-97. *Boundary-Layer Meteorology*, <https://doi.org/10.1007/s10546-020-00577-y>.