

Dr. David D. Turner

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(a) Professional Preparation

University of Wisconsin, Madison, WI	Atmospheric Sciences, Ph.D., 2003
Eastern Washington University, Cheney, WA	Mathematics, M.S., 1994
Eastern Washington University, Cheney, WA	Mathematics, B.A., 1992

(b) Appointments

Dec 2022 – current	Senior Scientist, Global Systems Laboratory, NOAA
May 2018 – current	Program Manager, Atmospheric Science for Renewable Energy Program, Global Systems Laboratory, NOAA
Oct 2016 – Dec 2022	Chief, Verification and Assessment Branch, Assimilation and Verification Innovation Division, Global Systems Laboratory, NOAA
Feb 2013 – Dec 2020	Fellow, Cooperative Institute for Mesoscale Meteorological Studies (CIMMS), University of Oklahoma
Aug 2010 – Sep 2016	Meteorologist, Forecast Research and Development Division, NOAA National Severe Storms Laboratory
Aug 2011 – Aug 2016	Adjunct Professor, School of Meteorology, University of Oklahoma
Aug 2009 – Aug 2012	Assistant Professor, Atmospheric and Oceanic Sciences Department, University of Wisconsin – Madison
Aug 2005 – Jul 2009	Research Scientist, Space Science and Engineering Center, University of Wisconsin – Madison
Jun 2007 – Jul 2007	Guest Professor, Institute for Geophysics and Meteorology, University of Cologne
Jul 2003 – Aug 2005	Senior Research Scientist II, Climate Physics Group, Pacific Northwest National Laboratory
Sep 2000 – Jun 2003	Research Assistant, Atmospheric and Oceanic Sciences Department, University of Wisconsin – Madison
Sep 1998 – Aug 2000	Senior Research Scientist I, Climate Physics Group, Pacific Northwest National Laboratory
Jul 1994 – Aug 1998	Research Scientist, Information Sciences and Engineering Group, Pacific Northwest National Laboratory
Sep 1992 – Jun 1994	Instructor, Mathematics Department, Eastern Washington University

Note: I joined NOAA as a ZP4-1340 in Aug 2010. I was promoted to a ZP5-1340 in Sep 2019 and to Senior Scientist (ST) in Dec 2022. I am a U.S. Citizen, and am registered for Selective Service.

(c) Research Interests

- Boundary layer thermodynamic and dynamic structure, diurnal evolution, turbulent mixing, convection and convection initiation, and other processes
- Characterizing land-atmosphere interactions, including turbulent interactions and the how the land surface affects cloud properties and vice versa, surface energy budget partitioning, and improving the representation of these processes in models
- Utilizing advanced thermodynamic and kinematic boundary layer profiling observations to evaluate and improve numerical weather prediction models
- Passive and active remote sensing of boundary layer thermodynamic and dynamic structure

- Life cycle of clouds and their impact on the radiative energy budget of the surface and atmosphere, especially when influenced by aerosols
- Evolution of microphysical cloud properties, including the remote sensing of these properties, and understanding microphysical processes at work in mixed-phase clouds
- Longwave (infrared and microwave) radiative transfer model improvements: gas spectroscopy and cloud absorption/scattering properties
- Machine learning (ML) applications, including using physics-based constraints in training, parameterization replacement in numerical weather prediction, and model verification using ML

(d) Specialized Skills

- Extensive experience with the ground-based infrared spectrometer (IRS) systems and data: calibration, basic repairs, deployment for field experiments, quality control, analysis
- Extensive experience with Raman lidar: calibration, alignment of detection optics, quality control, analysis
- Observing facility development and deployment: design, fabrication, deployment, software development (processing and display system) of the Collaborative Lower Atmospheric Mobile Profiling System (CLAMPS). CLAMPS includes three remote sensors (AERI, microwave radiometer, and Doppler lidar) in a 16' mobile trailer
- Retrieval algorithm development: (1) mixed-phase cloud property retrieval algorithm (MIXCRA; Turner JAM 2005), which provided liquid and ice cloud properties from AERI radiances; (2) precipitable water vapor and liquid water path from microwave radiometer observations (MWRRET; Turner et al. TGRS 2007); (3) thermodynamic profiles and cloud properties retrieved from IRS radiance simultaneously (AERIOe; Turner and Löhnert 2014); and (4) thermodynamic profiles and liquid water path retrieved from microwave radiometer observations (MWRoe; Blumberg et al. 2015). AERIOe and MWRoe have been merged into a single retrieval algorithm called TROPoe (Turner and Löhnert 2021), which is available to the community via DockerHub. Note that MWRRET and TROPoe are currently running operationally in the ARM Program's Data Management Facility
- Radiative transfer model development: infrared absorption and scattering model LBLDIS (Turner et al. JAM 2003); water vapor spectroscopy (Turner et al. TGRS 2009; Turner et al. JAS 2004); cloud absorption and scattering properties (Turner et al. JTECH 2016; Yang et al. 2003)
- Experience in using machine learning techniques for a range of applications (Lagerquist et al. 2021; Sedlar et al. 2021; Krishnamurthy et al. 2021; Marke et al. 2016; Cadeddu et al. 2009)
- Programming languages: IDL (expert), C (expert), unix/linux programming environments (expert), fortran (proficient), c-shell (proficient), matlab (familiar), python (familiar), html (familiar), bash (familiar)
- Docker containers and GitHub

(e) Professional Activities

- External advisory board member, Howard University Beltsville Campus, HUBC-ICART (2023 – present)
- Co-chair, ICAMS Committee on Research and Innovation (CoRI), 2022 – present
- Manager, NOAA Atmospheric Science for Renewable Energy Program, 2018 – present
- NOAA / ESRL Renewable Energy Science Council member, 2018 – present
- NOAA / GSL / AVID / Verification and Assessment Branch chief, 2017 – 2022
- 5th National Climate Assessment (NCA5), Mitigation Chapter, Agency Coordinating Author (2021 – 2024)
- Member, Subcommittee on Data Assimilation and Observation Strategy, CoRI / ICAMS, 2022 – present
- Member, Advisory Committee for ARM Mobile Facility Southeast US field campaign, 2020 – present
- Principal Investigator, DOE Atmospheric Radiation Measurement (ARM) Program and Atmospheric System Research (ASR) program, 2005 – present
- Member, WMO Nowcasting and Mesoscale Research Working Group, 2017 – present
- Member, DOE ARM Atmospheric Modeling Advisory Group, 2016 – present
- Member, American Meteorological Society (AMS), 1998 – present
- Member, American Geophysical Union, 2003 – present
- Member, European Geophysical Union, 2022 – present
- Member, ACTRIS Data Center External Panel, 2015 – present
- Member, Jülich Observatory for Cloud Evolution (JOYCE) advisory board, 2016 – present
- Member, NASA Planetary Boundary Layer (PBL) Survey Team, 2019 – 2021

- Lead Editor, AMS Monograph “*The Atmospheric Radiation Measurement Program: The First 20 Years*”
- NSSL / FRDD / CRAFT branch chief, 2013 – 2016
- Chair, DOE Atmospheric Radiation Measurement (ARM) User Executive Committee, 2014 – 2016
- Executive Board Member, University of Oklahoma Cooperative Institute for Meteorological Mesoscale Studies, 2012 – 2016
- Member, ARM Science and Infrastructure Steering Committee (SISC), 2007 – 2016
- Organizer and instructor, ARM Summer Training and Science Applications Workshop, 2015
- Instructor, Initial Training for Atmospheric Remote Sensing (ITaRS), 2014
- Co-chair, DOE Office of Biological and Environmental Science (BER) Climate Research Roadmap Committee, 2010
- Chair, DOE Atmospheric Systems Research (ASR) Program Science Plan Committee, 2009
- Chair, ASR Cloud-Aerosol-Precipitation Interactions Working Group, 2010 – 2013
- Chair, ARM Climate Research Facility Science Board, 2009 – 2011
- Associate Editor, AMS Journal of Atmospheric and Oceanic Technology, 2006 – 2011
- Chair, ARM Radiative Processes Working Group, 2007 – 2009
- Member, US Global Change Research Program (USGCRP) Water Cycle Science Steering Group, 2006 – 2009
- Member, NSF Committee for the NCAR Facilities Assessment of Solar Measurements, 2006 – 2007
- Member, International Scientific Steering Committee for the Convective and Orographic Precipitation Study (COPS), 2006 – 2009
- Member, AMS Committee on Laser Atmospheric Studies (CLAS), 2003 – 2006
- Developed a high-spectral-resolution radiative transfer model that includes scattering (LBLDIS), used by at least 25 users in 17 different institutions
- Lecturer, COPS Summer School, Black Forest, Germany, 2007
- Lecturer, International Summer School on Atmospheric and Oceanic Sciences, L’Aquila, Italy, 2007
- ARM Raman Lidar Instrument Mentor, 2003 – 2008
- ARM Atmospheric Emitted Radiance Interferometer (AERI) Instrument Mentor, 2006 – 2010
- Field Campaign Leadership
 - Co-PI, NOAA component of the WFIP-3 field campaign, planning for Jan 2024 – Jul 2025
 - Co-PI, NOAA component of the CHEESEHEAD field campaign, Jul – Oct 2019
 - PI, Land Atmosphere Feedback Experiment (LAFE), August 2017
 - Co-I and Steering Committee Member, Plains Elevated Convection at Night (PECAN), June-July 2015
 - PI, Lower Atmospheric Boundary Layer Experiments, Sep-Nov 2012 and May-Jun 2013
 - Co-PI, National Science Foundation (NSF) Integrated Characterization of Energy, Clouds, Atmospheric State, and Precipitation at Summit (ICECAPS), May 2010-Aug 2018
 - PI, ARM Radiative Heating in Underexplored Bands Campaign (RHUBC-II), Aug-Oct 2009
 - Co-I, ARM Routine AVP CLOUD Optical Radiative Observations (RACORO), Jan-Jun 2009
 - Co-I, ARM Indirect and Semi-Direct Aerosol Campaign (ISDAC), Apr 2008
 - Co-I, ARM Convective and Orographic Precipitation Study (COPS), Apr-Dec 2007
 - PI, ARM Radiative Heating in Underexplored Bands Campaign (RHUBC-I), Feb-Mar 2007
 - PI, PNNL Lexington-A Campaign to Investigate Solar Scattering and Emission in 3-5 μm band, 2005
 - Co-I, ARM Aerosol Lidar Validation Experiment (ALIVE), 2005
 - Co-I, ARM Mixed-Phase Arctic Cloud Experiment (M-PACE), 2004
 - Co-I, ARM Water Vapor Experiments (WVIOPs) in 1997, 1999, 2000
- Scientific Meeting Organization and Leadership
 - Co-chair, NOAA Bedrock-to-Boundary Layer Workshops, 2019 and 2021
 - Chair, Gordon Research Conference on Radiation and Climate, 2017
 - Program co-chair, International Symposium on Tropospheric Profiling (ISTP), 2017
 - Member of the ARM / ASR Science and Infrastructure Steering Committee; as such, I have helped organize the annual ARM Science Team meeting in 2007 – 2009 and the annual ASR Science Team meeting in 2010 – 2016
 - Chair, Workshop on Far-Infrared Remote Sensing, 2011

- Session chair, 8th International Symposium on Tropospheric Profiling, 2009
- Session chair, AMS 3rd Symposium on Lidar Atmospheric Applications, 2007
- Session chair, 7th International Symposium on Tropospheric Profiling, 2006
- Session organizer, AMS 2nd Symposium on Lidar Atmospheric Applications, 2005
- General Chair, Optical Society of America (OSA) Hyperspectral Imaging and Sounding of the Environment Topical Meeting, 2005
- Awards
 - 2022 NOAA Boulder Outreach ‘gold star’ recipient (twice)
 - 2021 NOAA OAR Administrator’s Award for the final HRRR implementation
 - 2017 AGU Editor’s Citation for Excellence in Refereeing JGR-Atmospheres
 - 1st awardee of the Hans Liebe Lectureship, 2014 URSI National Radio Science Meeting

(f) Current Staff / Students Being Advised

Post-doc advisor for Dr. Julia Simonson, NOAA GSL, Post-doc 2022 – present

Mentor for these NERTO students: Kylie Hoffman, PhD student from the Univ Maryland Baltimore County; Christopher Chuck Baker, PhD student from Univ Maryland; and Akarshna Iyer, MS student from Hampton Univ

Formal advisor for these graduate students: Jonah Shaw (Univ Colorado), Tessa Rosenberger (Cleveland State Univ), Lars van Gelder (Univ Cologne)

Informal advisor for these students: Lei Liu (McGill Univ), Alex Collin (Univ Colorado), and Andrea Burgos-Cuevas (Univ Cologne), Calvin Coulbury (McGill Univ)

(g) Former Graduate Students and Post-doctoral Students

- NOAA Hollings Scholars: Conor McNicholas (2013), Matthew Bray (2019), Jake Lindblom (2022)
- NOAA NERTO/NCAS-M Scholars: Stephen Solimine (2018), Alrick Green (2021-2022), Kylie Hoffman (2021-present), Christopher Chuck Baker (2024-present), Akarshna Iyer (2024-present)

Dr. Heather Guy, University of Leeds, PhD 2023

Fog and aerosols over central Greenland

Dr. Ryann Wakefield, NOAA Global Systems Lab, Post-doc 2021-2022

Quantifying land-atmosphere interactions using coupling metrics and ARM data

Mr. Ryan Pajela, University of Oklahoma, MS 2022

Structure of tropopause polar vortices represented from the atmospheric profiles of satellite observations

Dr. David Loveless, University of Wisconsin – Madison, PhD 2021

Developing a synergy between space-based infrared sounders and the ground-based atmospheric emitted radiance interferometer (AERI) to improve thermodynamic profiling of the planetary boundary layer

Dr. Shima Bahramvash Shams, Washington State University, PhD 2021

An investigation of ozone variability and associated uncertainties over high northern latitudes

Mr. Jongjin Seo, University of Wisconsin – Madison, MS 2021

Using multiple scanning angles to improve AERI thermodynamic retrievals

Dr. Jianhao Zhang, University of Miami, PhD 2020

Interactions between light-absorbing smoke and marine boundary layer clouds over the remote southeast Atlantic

Dr. Chris Riedel, University of Oklahoma, PhD 2020

Tropospheric polar vortices and the impacts on atmospheric flow from the Arctic to the mid-latitudes using a new global modeling system

Dr. David New, University of Maryland, PhD 2019

The role of consistent turbulence energetics in the representation of sub-grid mixing and transport in numerical weather and climate models

Dr. Mohammed Osman, University of Oklahoma, Post-doc 2016-2018

Using lidar observations to evaluate similarity relationships in convective boundary layers

Ms. Sarah Borg, University of Oklahoma, MS 2018

Characteristics of Tropopause Polar Vortices based on observations from Summit Station, Greenland

Dr. W. Greg Blumberg, University of Oklahoma, PhD 2018

- Moisture jumps during the evening transition: Observations and simulations from the Southern Great Plains site*
- Dr. Kobra Khosravian, University of Cologne, PhD 2017
CO2 profiling in the lower troposphere using a high-spectral-resolution infrared radiometer
- Mr. Jonathan Edwards-Opperman, University of Oklahoma, MS 2016
Large-scale and local influences on the occurrence and maintenance of liquid-bearing clouds over the Greenland Ice Sheet
- Ms. Mallory Row, University of Oklahoma, MS 2016
Synoptic and local influences on a summertime, long-lived, mixed-phase cloud event over Summit, Greenland
- Mr. Andrew Dzambo, University of Oklahoma, MS 2015
Climatology of RHice distributions in cirrus clouds by synoptic regime
- Mr. Nils Kuchler, University of Cologne, MS 2015
Characterization and improvement of absolute calibration techniques for microwave radiometers
- Dr. Veronique Meunier, McGill University, PhD 2013
Performance and information content in tomographic retrievals of water vapor from MWRs
- Mr. Nathan Anderson, University of Oklahoma, MS 2014
Vertical velocity turbulence profiles measured by two horizontally separated Doppler lidars
- Mr. Stephen Castleberry, University of Oklahoma, MS 2014
Evaluation of a microwave radiometer thermodynamic retrieval algorithm
- Dr. Subhashree Mishra, University of Oklahoma, Post-doc 2011-2013
Aerosol and water vapor analysis at the ARM Darwin Site using Raman lidar
- Dr. Dhashani Bopege, University of Oklahoma, Post-doc 2012-2013
Characterizing the Absolute Solar Transmission Interferometer during RHUBC-II
- Mr. W. Greg Blumberg, University of Oklahoma, MS 2013
Developing a Statistical Thermodynamic Retrieval for Ground-based Infrared Spectrometers
- Mr. Alexander Zwink, University of Oklahoma, MS 2013
Radiative flux divergence of different Arctic cloud types
- Ms. Jordan Guernsey, University of Oklahoma, MS 2012
An examination of the vertical structure of cold fronts and associated prefrontal features
- Dr. Sean Crowell, University of Oklahoma, Post-doc 2011-2012
Using OSSEs to evaluate the utility of ground-based profilers on NWP simulations
- Dr. Aronne Merrelli, University of Wisconsin – Madison; Ph.D. 2012
The atmospheric information content of the Earth's far infrared spectrum
- Mr. Nate Miller, University of Wisconsin – Madison, M.S. 2012
Microwave radiometer observations of surface-based inversions above the Greenland ice sheet
- Dr. Tim Wagner, University of Wisconsin – Madison; Ph.D. 2011
A method for retrieving cumulus entrainment rate from ground-based remote sensors
- Mr. Erik Janzon, University of Wisconsin – Madison, M.S. 2011
Data assimilation study for a national network of boundary layer thermodynamic profilers
- Dr. Subsashree Misha, University of Nevada Reno, Ph.D. 2011 (external committee member)
Importance of ice cloud particle size distribution on climate model simulations
- Dr. Payal Mehta, Imperial College, London; Ph.D. graduated 2010 (external committee member)
Radiative properties of dust in the thermal infrared

(h) Peer-Reviewed Publications

40 of the 254 below are as first author

h-index from scholar.google.com is 63

254. Pagano, T.C., B. Casati, S. Landman, N. Loveday, R. Taggart, E.E. Ebert, M. Khanarmuei, T.L. Jensen, M. Mittermaier, H. Roberts, S. Willington, N. Roberts, M. Sowko, G. Strassberg, C. Kluepfel, T.A. Bullock, **D.D. Turner**, F. Pappenberger, N. Osborne, and C. Noble, 2024: Challenges of operational weather forecast verification and evaluation. *Bull. Amer. Meteor. Soc.*, 105, E789-E802, doi:10.1075/BAMS-D-22-0257.1.
253. **Turner, D.D.**, L. Ott, P.F. Steblein, M. Stieglitz, O. Tweedy, J. Furman, and C.S. James, 2024: Improving the science for wildland fire prediction at S2S scales. *Bull. Amer. Meteor. Soc.*, 105, E332-E336, doi:10.1175/BAMS-D-23-0184.1.

252. Cifelli, R., V. Chandrasekar, L. Herdman, **D.D. Turner**, A.B. White, T.I. Alcott, M. Anderson, P. Barnard, S.K. Biswas, M. Boucher, J. Bytheway, H. Chen, H. Cutler, J.M. English, L. Erickson, F. Junyent, D. Gottas, J. Jasperse, L.E. Johnson, J. Krebs, J. van de Lindt, J. Kim, M. Leon, Y. Ma, M. Marquis, W. Moninger, G. Pratt, C. Radhakrishnan, M. Shields, J. Spaulding, B. Tehranirad, and R. Webb, 2024: Advanced quantitative precipitation information: Improving monitoring and forecasts of precipitation, streamflow, and coastal flooding in the San Francisco Bay area. *Bull. Amer. Meteor. Soc.*, 105, E313-E331, doi:10.1175/BAMS-D-21-0121.1.
251. Wulfmeyer, V., C. Senff, F. Spaeth, A. Behrendt, D. Lange, R.M. Banta, W.A. Brewer, A. Wieser, and **D.D. Turner**, 2024: Profiling the molecular destruction rates of temperature and humidity as well as the turbulent kinetic energy dissipation in the convective boundary layer. *Atmos. Meas. Technol.*, 17, 1175-1196, doi:10.5194/amt-17-1175-2024.
250. Pichugina, Y.L., R.M. Banta, E.J. Strobach, B.J. Carroll, W.A. Brewer, **D.D. Turner**, V. Wulfmeyer, E. James, T.R. Lee, S. Baidar, J.B. Olson, R.K. Newsom, H.-S. Bauer, and R. Rai, 2024: Case study of a bore wind-ramp event from lidar measurements and HRRR simulations over ARM Southern Great Plains. *J. Renewable Sustainable Energy*, 16, 013303, doi:10.1063/5.0161905.
249. Sun, X., D. Heinzeller, L. Bernardet, L. Pan, W. Li, **D.D. Turner**, and J. Brown, 2024: A case study investigating the low summertime CAPE behavior in the Global Forecast System. *Wea. Forecasting*, 39, 3-17, doi:10.1175/WAF-D-22-0208.1.
248. Hohenegger, C., and 51 coauthors (including **D.D. Turner**), 2023: FESSTVaL: The field experiment on submesoscale spatio-temporal variability in Lindenberg. *Bull. Amer. Meteor. Soc.*, 104, E1875-E1892, doi:10.1175/BAMS-D-21-0330.1.
247. Lagerquist, R., **D.D. Turner**, I. Ebert-Uphoff, and J.Q. Stewart, 2023: Estimating full longwave and shortwave radiative transfer with neural networks of varying complexity. *Wea. Forecasting*, 40, 1407-1432, doi:10.1175/JTECH-D-23-0012.1.
246. Banta, R.M., Y.L. Pichugina, W.A. Brewer, K.A. Balmes, B. Adler, J. Sedlar, L.S. Darby, **D.D. Turner**, J.S. Kenyon, E.J. Strobach, B.J. Carroll, J. Sharp, M.T. Stoelinga, J. Cline, and H.J.S. Fernando, 2023: Measurements and model improvement: Insight into NWP model error using Doppler lidar and other WFIP2 measurement systems. *Mon. Wea. Rev.*, 151, 3063-3087, doi:10.1175/MWR-D-23-0069.1.
245. Lackner, C.P., B. Geerts, Y. Wang, T.W. Juliano, L. Xue, B. Kosovic, and **D.D. Turner**, 2023: Insights into the relation between vertical cloud structure and dynamics of three polar lows: Observations from COMBLE. *Quart. J. Roy. Meteor. Soc.*, 149, 2992-3013, doi:10.1002/qj4543.
244. Xia, G., T.G. Smirnova, **D.D. Turner**, S. He, B. Yang, L.K. Berg, and C. Draxl, 2023: Sensitivity of near-surface variables in the RUC land surface model in the Weather Research and Forecasting model. NREL Tech Report, NREL/TP-5000-84961, 32 pp., available from <https://www.nrel.gov/docs/fy23osti/84961.pdf>.
243. Duda, J.D., and **D.D. Turner**, 2023: Using object-based verification to assess improvements in forecasts of convective storms between operational HRRR versions 3 and 4. *Wea. Forecasting*, 38, 1971-1994, doi:10.1175/WAF-D-22-0181.1.
242. Pichugina, Y.L., R.M. Banta, W.A. Brewer, **D.D. Turner**, V. Wulfmeyer, E.J. Strobach, S. Baidar, and B.J. Carroll, 2023: Doppler lidar measurements of wind variability and LLJ properties in central Oklahoma during the August 2017 Land-Atmosphere Feedback Experiment. *J. Appl. Meteor. Clim.*, 62, 947-969, doi:10.1175/JAMC-D-22-0128.1.
241. Gilleland, E., D. Munoz-Esparza, and **D.D. Turner**, 2023: Competing forecast verification: Using the power-divergence statistic for testing the frequency of "better". *Wea. Forecasting*, 38, 1539-1552, doi:10.1175/WAF-D-22-0201.1.
240. Baidar, S., T.J. Wagner, **D.D. Turner**, and W.A. Brewer, 2023: Using optimal estimation to retrieve winds from velocity-azimuth display (VAD) scans by a Doppler lidar. *Atmos. Meas. Tech.*, 16, 3715-3726, doi:10.5194/amt-16-3715-2023.
239. Wakefield, R.A., **D.D. Turner**, T. Rosenberger, T. Heus, T. Wagner, J. Santanello, and J. Basara, 2023: A methodology for estimating the energy and moisture budget of the convective boundary layer using continuous ground-based infrared spectrometer observations. *J. Appl. Meteor. Clim.*, 62, 901-914, doi:10.1175/JAMC-D-22-0163.1.
238. Adler, B., J.M. Wilczak, L. Bianco, L. Baiteau, C.J. Cox, G. de Boer, I.V. Djalalova, M.R. Gallagher, J.M. Intrieri, T.P. Meyers, T.A. Myers, J.B. Olson, S. Pezoa, J. Sedlar, E.N. Smith, **D.D. Turner**, and A.B. White, 2023: Impact of seasonal snow-cover change on the observed and simulated state of the

- atmospheric boundary layer in a high-altitude mountain valley. *J. Geophys. Res.*, 128, e2023JD038497, doi:10.1029/2023JD038497.
237. He, S., D.D. Turner, S.G. Benjamin, J.B. Olson, T.G. Smirnova, and T. Meyers, 2023: Evaluation of the near-surface variables in the HRRR weather model using observations from the ARM SGP site. *J. Appl. Meteor. Clim.*, 62, 769-780, doi:10.1175/JAMC-D-23-0003.1.
 236. Guy, H., I.M. Brooks, **D.D. Turner**, C.J. Cox, P.M. Rowe, M.D. Shupe, V.P. Walden, and R.R. Neely III, 2023: Observations of fog-aerosol interactions over central Greenland. *J. Geophys. Res.*, 128, e2023JD038718, doi:10.1029/2023JD038718.
 235. Lee, T.R., R.D. Leeper, T. Wilson, H.J. Diamond, T.P. Meyers, and **D.D. Turner**, 2023: Using the U.S. Climate Reference Network to identify biases in near- and subsurface meteorological fields in the High-Resolution Rapid Refresh (HRRR) weather prediction model. *Wea. Forecasting*, 38, 879-900, doi:10.1175/10.1175/WAF-D-22-0213.1
 234. LaFleur, A.T., R.L. Tanamachi, D.T. Dawson II, and **D.D. Turner**, 2023: Factors affecting the rapid recovery of CAPE on 31 March 2016 during VORTEX-Southeast. *Mon. Wea. Rev.*, 151, 1459-1477, doi:10.1175/MWR-D-22-0051.1.
 233. Cadeddu, M.P., V. Ghate, **D.D. Turner**, and T. Surleta, 2023: Boundary layer moisture variability at the Atmospheric Radiation Measurement (ARM) Eastern North Atlantic observatory during marine conditions. *Atmos. Chem. Phys.*, 23, 3453-3470, doi:10.5194/acp-23-3453-2023.
 232. Balmes, K.A., J. Sedlar, L.D. Riihimaki, J.B. Olson, **D.D. Turner**, and K. Lantz, 2023: Regime-specific cloud vertical overlap characteristics from radar and lidar observations at the ARM sites. *J. Geophys. Res.*, 128, e2022JD037772, doi:10.1029/2022JD037772.
 231. Adler, B., 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 Columbian River Basin in different versions of the High-Resolution Rapid Refresh (HRRR) model. *Geosci. Model Dev.*, 16, 597-619, doi:10.5194/gmd-16-597-2023.
 230. Di Natale, G., **D.D. Turner**, G. Bianchini, M. Del Gusta, L. Palchetti, A. Bracci, L. Baldini, T. Maestri, W. Cossich, M. Martinazzo, and L. Facheris, 2022: Consistency test of precipitating ice cloud retrieval properties obtained from the observations of different instruments operating at Dome-C (Antarctica). *Atmos. Meas. Technol.*, 15, 7235-7258, doi:10.5194/amt-15-7235-2022.
 229. Shaw, W.J., L.K. Berg, M. Debnath, G. Deskos, C. Draxl, V.P. Ghate, C.B. Hasager, R. Kotamarthi, J.D. Mirocha, P. Muradyan, W.J. Pringle, **D.D. Turner**, and J.M. Wilczak, 2022: Scientific challenges to characterizing the wind resource in the marine atmospheric boundary layer. *Wind Energy Sci.*, 7, 2307-2334, doi:10.5194/wes-7-2307-2022.
 228. Ghate, V.P., J.B. Olson, K.E. Szoldatits, and **D.D. Turner**, 2022: Gap flows along the Columbia River observed during the WFIP2 field campaign. Argonne National Laboratory Tech. Report, ANL-22/15, 32 pp, doi:10.2172/1844342. Available from <https://publications.anl.gov/anlpubs/2022/02/173231.pdf>.
 227. Pichugina, Y.L., R.M. Banta, W.A. Brewer, J. Kenyon, J.B. Olson, **D.D. Turner**, J. Wilczak, S. Baidar, J.K. Lindquist, W.J. Shaw, and S. Wharton, 2022: Model evaluation by measurements from co-located remote sensors in complex terrain. *Wea. Forecasting*, 37, 1829-1853, doi:10.1175/WAF-D-21-0214.1.
 226. Seo, J., T.J. Wagner, P.J. Gero, and **D.D. Turner**, 2022: The impact of non-zenith elevation angles on ground-based infrared thermodynamic retrievals. *J. Atmos. Oceanic Technol.*, 39, 1395-1414, doi:10.1175/JTECH-D-21-0134.1.
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