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EDUCATION AND TRAINING:

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|-------------|---|--------------------------|
| 1996 | University of Colorado at Boulder
Doctor of Philosophy in Aerospace Engineering | Boulder, CO |
| 1991 | The Pennsylvania State University
Master of Science in Aerospace Engineering | State College, PA |
| 1988 | University of Rijeka
Bachelor of Science in Mechanical Engineering | Rijeka, Croatia |
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EMPLOYMENT HISTORY:

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|-------------------------------------|---|----------------------|
| November 2018- present | National Center for Atmospheric Research
<i>Project Scientist III, Research Applications Laboratory (RAL)</i>
2018-present <i>Director,</i>
Weather Systems and Assessment Program (WSAP)
2013-present <i>Program Manager for Renewable Energy, WSAP</i> | Boulder, CO |
| September 2009-November 2018 | National Center for Atmospheric Research
<i>Project Scientist II, RAL</i>
2014-2018 <i>Deputy Science Director, WSAP</i> | Boulder, CO |
| 2002-2009 | Lawrence Livermore National Laboratory
<i>Physicist, Atmospheric, Earth and Energy Division</i>
2007-2009 <i>Deputy Group Leader,</i>
Atmospheric Transport, Fate, and Hazard Assessment | Livermore, CA |
| 2001-2002 | University of Colorado at Boulder
<i>Research Associate, Department of Aerospace Engineering</i> | Boulder, CO |
| 2000-2001 | University of California at Davis
<i>Visiting Research Assistant Professor, Department of Mathematics</i> | Davis, CA |
| 1999-2000 | California Institute of Technology
<i>Scientist, Department of Aeronautics, Graduate Aeronautical Laboratory</i> | Pasadena, CA |

PROJECTS - PI, Co-PI, or Science Lead:

- 2021-present “Improving High Resolution Offshore Wind Resource Assessments and Forecasts for the MA/RI Lease Areas” – Woods Hole Oceanographic Institute (DOE) – NCAR Principal Investigator (\$750k)
- 2020-present “Numerical Simulations of Cold Air Outbreaks Using a Multi-Scale Modeling Framework” – University of Wyoming, Department of Energy – NCAR Principal Investigator (\$434k)
- 2020-present “Fighting Wildfires under Climate Change: A Data-Informed Physics-Based Computational Framework for Probabilistic Risk Assessment and Mitigation, and Emergency Response Management” funded by University of Nevada, National Science Foundation – NCAR Principal Investigator (\$319k)
- 2020-2021 “Energy Research and Forecasting Model” funded by Lawrence Livermore National Laboratory, United States Department of Energy – NCAR Principal Investigator (\$49k)
- 2018-2021 “Development of WRF-Solar v2—Improving Solar Forecasts” funded by Pacific North National Laboratory/United States Department of Energy – NCAR Principal Investigator (\$347k)
- 2017-present “Renewable Energy Forecasting for Kuwait” – Kuwait Institute for Science and Technology, Science Lead and co-PI (\$5.1M)
- 2013-present “Mesoscale to Microscale Coupling” – United States Department of Energy, co-PI (\$625K)
- 2017-2020 “Estimations of fuel moisture content for improved wildland fire spread prediction” funded by NASA – Principal Investigator (\$926k)
- 2015-2018 “Forecast Improvement in Complex Terrain near the Columbia River Gorge” funded by Vaisala/United States Department of Energy – NCAR Principal Investigator (\$450k)
- 2014-2015 “Validation of large-eddy simulation with Weather Research and Forecasting Model using data from Askervein Hill experiment” funded by Lawrence Livermore National Laboratory – Principal Investigator (\$25k)
- 2012-2016 “A Public-Private-Academic Partnership to Advance Solar Power Forecasting” funded by the United States Department of Energy – Science Lead (\$4.1M)
- 2012-2015 “Variable Renewable Energy Forecasting System, Phase III” funded by Xcel Energy, Inc. – Science Lead (\$2.1M)
- 2012-2015 “Impacts of stratification and non-equilibrium waves on hub-height winds” funded by the United States Department of Energy – Co-Principal Investigator (\$700k)

- 2012-2014 “Simulation of Turbine Wakes from the Turbine Wake and Inflow Characterization Study using an Actuator Disk turbine wake parameterization implemented into the Weather Research and Forecasting (WRF) model” funded by Lawrence Livermore National Laboratory – Principal Investigator (\$70k)
- 2009-2011 “Implementation of an actuator disk wind turbine model into WRF for large-eddy simulation applications” funded by Siemens/Lawrence Livermore National Laboratory – Principal Investigator (\$80k)
- 2004-2007 “Event reconstruction – source term estimation” funded by Lawrence Livermore National Laboratory/United States Department of Energy – Principal Investigator (\$1.6M)
- 2000-2002 “Parameterization Errors in Numerical Simulations of Stably-Stratified Atmospheric Boundary Layers Using CASES-99 Observations” funded by National Science Foundation – Principal Investigator (\$249k)
- 2000-2002 “Application of SHEBA Data to Understanding and Simulating the Cloud-Radiation Feedback: The Cloudy Boundary Layer” funded by National Science Foundation – Principal Investigator (\$493k)

AWARDS:

2019 RAL Outstanding Publication Award

2018 NCAR Mentoring Award

2017 RAL Mentoring Award

2016 NCAR Scientific and Technical Achievement Award - for the Sun4Cast Solar Power Forecasting System, Research Applications Laboratory

2014 CO-Labs Award – Colorado Governor’s Award for High-Impact Research for Sustainability “NCAR Wind & Solar Power Forecasting” as one of Principal Investigators on the NCAR Wind Power Forecasting Team

2013 CO-Labs Honorable Mention – Colorado Governor for High-Impact Research in Sustainability, NCAR Team for “A Wind Power Forecasting System to Optimize Integration of Renewable Energy into the Power Grid”

PROFESSIONAL ACTIVITIES:

- 2020-present Chair of the Ad Hoc Committee on Wildfire Weather, Technology and Risk of the American Meteorological Society
- 2015-present Associate Editor “Boundary-Layer Meteorology”
- 2014-2017 Member of the Renewable Energy Committee of the American Meteorological Society
- 2017 Member of the Local Organizing Committee for the Windtech2017 Conference
- 2014 Member of the Local Organizing Committee for the 3rd International Conference Energy & Meteorology
- 2010 Program Chair for the 19th Boundary Layers and Turbulence Symposium of the American Meteorological Society

2006-2009 Chair of the Boundary Layers and Turbulence Committee of the American Meteorological Society
2003-2006 Member of the Boundary Layers and Turbulence Committee of the American Meteorological Society

PEER-REVIEWED PUBLICATIONS:

1. Bhardwaj, P., R. Kumar, D. A. Mitchell, C. A. Randles, N. Downey, D. Blewitt, **B. Kosovic**, 2021: Evaluating the detectability of methane point sources from satellite observing systems using microscale modeling. Accepted for publication in *Scientific Reports*.
2. Muñoz-Esparza, D., C. Becker, J. A. Sauer, D. J. Gagne, J. Schreck, **B. Kosović**, 2022: On the Application of an Observations-Based Machine Learning Parameterization of Surface Layer Fluxes Within an Atmospheric Large-Eddy Simulation Model. *Journal of Geophysical Research: Atmospheres*, 127 (16), e2021JD036214
3. McCandless, T., D. J. Gagne, **B. Kosović**, S. E. Haupt, B. Yang, C. Becker, J. Schreck, 2022: Machine Learning for Improving Surface-Layer-Flux Estimates. *Boundary-Layer Meteorology*, **185**, 199 – 228.
4. Elhami-Khorasani, N., H. Ebrahimian, L. Buja, S. L. Cutter, **B. Kosovic**, 2022: Conceptualizing a probabilistic risk and loss assessment framework for wildfires. *Natural Hazards*, 1-17. <https://doi.org/10.1007/s11069-022-05472-y>
5. Shuman, J.,... **B. Kosovic**, and 85 coauthors, 2022: Reimagine Fire Science for the Anthropocene. *Proceedings of the National Academy of Sciences Nexus*,
6. DeCastro, A., A. Siems-Anderson, E. Smith, J. Knievel, **B. Kosović**, B. Brown, and J. K. Balch, 2022: WRF-Fire Simulated Burned Area and Propagation Direction Sensitivity to Initiation Point Location and Time. *Fire*, **5**, 58, <https://doi.org/10.3390/fire5030058>
7. Arthur, R. S., T. W. Juliano, B. Adler, R. Krishnamurthy, J. K. Lundquist, **B. Kosović**, and P. A. Jiménez, 2022: Improved representation of horizontal variability and turbulence in mesoscale simulations of an extended cold-air pool event. *Journal of Applied Meteorology and Climatology*, early online release, DOI: <https://doi.org/10.1175/JAMC-D-21-0138.1>
8. DeCastro, A., T. W. Juliano, **B. Kosović**, H. Ebrahimian, J. K. Balch, 2022: A Computationally Efficient Method for Updating Fuel Inputs for Wildfire Behavior Models Using Sentinel Imagery and Random Forest Classification. *Remote Sensing*, **14**, 1447, <https://doi.org/10.3390/rs14061447>
9. Geerts, B.,... **B. Kosovic**, and 32 coauthors, 2022: The COMBLE campaign: a study of marine boundary-layer clouds in Arctic cold-air outbreaks. *Bulletin of the American Meteorological Society*, 103, E1371–E1389, <https://doi.org/10.1175/BAMS-D-21-0044.1>
10. Juliano, T. W., P. A. Jimenez, **B. Kosovic**, T. Eidhammer, G. Thompson, L. K. Berg, J. Fast, A. Motley, and A. Polidori, 2022: Smoke from 2020 United States wildfires responsible for substantial solar energy forecast errors. *Environmental Research Letters*, **17**, 034010, DOI:10.1088/1748-9326/ac5143

11. Eghdami, M., A. P. Barros, P. A. Jimenez, T. W. Juliano, and **B. Kosovic**, 2022: Simulation of second-order turbulent properties of the surface boundary layer for three-dimensional flow based on the Mellor and Yamada model. *Monthly Weather Review*, early online release, DOI: <https://doi.org/10.1175/MWR-D-21-0101.1>
12. Xue, L., C. Weeks, S. Chen, S. A. Tessendorf, R. M. Rasmussen, K. Ikeda, **B. Kosovic**, D. Behringer, J. R. French, T. J. Zaremba, R. M. Rauber, C. P. Lackner, B. Geerts, D. Blestrud, M. Kunkel, N. Dawson, S. Parkinson, 2022: Comparison between observed and simulated AgI seeding impacts in a well-observed case from the SNOWIE field program. *Journal of Applied Meteorology and Climatology*, in print.
13. Redfern, S., J. K. Lundquist, O. B. Toon, D. Muñoz-Esparza, C. G. Bardeen, **B. Kosović**, 2021: Upper Troposphere Smoke Injection from Large Areal Fires. *Journal of Geophysical Research: Atmospheres*, **126**, e2020JD034332, DOI:10.1029/2020JD034332
14. Al-Rasheedi, M., M. Al-Khayat, C. A. Gueymard, S. E. Haupt, **B. Kosović**, J. A. Lee, 2021: Analyzing of a 10-MW wind farm at the Shagaya Renewable Energy Park in the hot, dusty desert environment of Kuwait. Part 1: Performance evaluation of the wind power to energy generation. *Sustainable Energy Technology and Assessment*, **47**, 101487, DOI:10.1016/j.seta.2021.101487
15. Al-Rasheedi, M., M. Al-Khayat, C. A. Gueymard, S. E. Haupt, **B. Kosović**, J. A. Lee, 2021: Performance Evaluation of 10 MW Multi-Technology Photovoltaic Systems at the Shagaya Renewable Energy Park in Kuwait. Part 2: Performance evaluation of the solar power to energy generation. *Sustainable Energy Technology and Assessment*, **47**, 101461, DOI:10.1016/j.seta.2021.101461
16. Juliano, T. W., **B. Kosović**, P. A. Jimenez, M. Eghdami, S. E. Haupt, A. Martilli, 2021: “Gray Zone” Simulations using a Three-Dimensional Planetary Boundary Layer Parameterization in the Weather Research and Forecasting Model. *Monthly Weather Review*, early online release, <https://doi-org.cuucar.idm.oclc.org/10.1175/MWR-D-21-0164.1>
17. Peña A., **B. Kosović**, J. D. Mirocha, 2021: Evaluation of idealized large-eddy simulations performed with the Weather Research and Forecasting model using turbulence measurements from a 250m meteorological mast. *Wind Energy Science*, **6**, 645–661, <https://doi.org/10.5194/wes-6-645-2021>.
18. Muñoz-Esparza, D., H. H. Shin, J. A. Sauer, M. Steiner, P. Hawbecker, J. Boehnert, J. O. Pinto, **B. Kosovic**, R. D. Sharman, 2021: Efficient graphics processing unit modeling of street-scale weather effects in support of aerial operations in the urban environment. *AGU Advances*, **2**, e2021AV000432. <https://doi.org/10.1029/2021AV000432>.
19. Muñoz-Esparza, D., **B. Kosović**, J. Mirocha, 2021: Discussion of paper "Numerical generation of inflow turbulence by cell perturbation technique in WRF simulation" by Singh et al. (2020). *Journal of Wind Engineering and Industrial Aerodynamics*, vol. 211 (2021) 104582 <https://doi.org/10.1016/j.jweia.2021.104582>
20. Zardi, D., M. Falocchi, L. Giovannini, W. Tirlor, E. Tomasi, G. Antonacci, E. Ferrero, S. Alessandrini, P. A. Jimenez, **B. Kosović**, and L. Delle Monache, 2021: The Bolzano Tracer Experiment (BTEX). Accepted for publication in *Bulletin of American Meteorological Society*.

21. Kumar, R., D. A. Mitchell, D. F. Steinhoff, P. Saide, **B. Kosović**, N. Downey, D. Blewitt, and L. Delle Monache, 2021: Evaluating the Mobile Flux Plane (MFP) Method to Estimate Methane Emissions Using Large Eddy Simulations (LES). *Journal of Geophysical Research: Atmospheres*, **126**, e2020JD032663. <https://doi.org/10.1029/2020JD032663>
22. Udina, M., À. Montornès, P. Casso, **B. Kosović**, J. Bech, 2020: WRF-LES Simulation of the Boundary Layer Turbulent Processes during the BLLAST Campaign. *Atmosphere*, **11**, 1149; doi:10.3390/atmos11111149
23. Muñoz-Esparza, D., J. Sauer, H. H. Shin, R. Sharman, **B. Kosović**, S. Meech, C. Garcia-Sánchez, M. Steiner, J. Knievel, J. Pinto, and S. Swerdlin, 2020: Inclusion of Building-Resolving Capabilities Into the FastEddy® GPU-LES Model Using an Immersed Body Force Method. *Journal of Advances in Earth System Modeling*, **12**, e2020MS002141. <https://doi.org/10.1029/2020MS002141>
24. McCandless, T., **B. Kosović**, W. Petzke, 2020: Enhancing Wildfire Spread Modelling by Building a Gridded Fuel Moisture Content Product with Machine Learning. *Machine Learning Science and Technology*, **1**, 035010, <https://doi.org/10.1088/2632-2153/aba480>.
25. **Kosović, B.**, P. Jimenez, T. Juliano, A. Martilli, M. Eghdami, A. P. Barros, S. E. Haupt, 2020: Three-Dimensional Planetary Boundary Layer Parameterization for High-Resolution Mesoscale Simulations. *Journal of Physics: Conference Series*, **1452**, 012080, doi:10.1088/1742-6596/1452/1/012080
26. Haupt, S.E., T. McCandless, S. Dettling, S. Alessandrini, G. Wiener, J. Lee, S. Linden, W. Petzke, T. Brummet, N. Nguyen, **B. Kosovic**, T. Hussain, and M. Al-Rasheedi, 2020: Combining Artificial Intelligence with Physics-Based Methods for Probabilistic Renewable Energy Forecasting, *Energies*, **13**, 1979; doi:10.3390/en13081979.
27. Haupt, S.E., L. Berg, M. Churchfield, **B. Kosovic**, W. Shaw, J. Mirocha, 2020: Mesoscale to Microscale Coupling for Wind Energy Applications: Addressing the Challenges, *J. Physics Conference Series* **1452** (2020) 012076, doi:10.1088/1742-6596/1452/1/012076
28. **Kosovic, B.**, S. E. Haupt, D. Bartlett, D. Adriaansen, S. Alessandrini, G. Wiener, L. Delle Monache, Y. Liu, S. Linden, T. Jensen, W. Cheng, M. Politovich, P. Prestopnik, 2019: Scientific Advances in Wind Power Forecasting. *Energies*, **13**, 1372; <https://doi.org/10.3390/en13061372>
29. Haupt, S. E., **B. Kosovic**, W. Shaw, L. K. Berg, M. Churchfield, J. Cline, C. Draxl, B. Ennis, E. Koo, R. Kotamarthi, L. Mazzaro, J. Mirocha, P. Moriarty, D. Muñoz-Esparza, E. Quon, R. K. Rai, M. Robinson, and G. Sever, 2019: On Bridging a Modeling Scale Gap – Mesoscale to Microscale Coupling for Wind Energy. *Bulletin of American Meteorological Society*, **100**, 2533-2549.
30. Patton, E., P. P. Sullivan, **B. Kosović**, J. Dudhia, L. Mahrt, M. Žagar, T. Marić, 2019: On the Influence of Swell Propagation Angle on Surface Drag. *Journal of Applied Meteorology and Climatology*, **58**, 1039-1059.
31. Tomasi, E., G. Lorenzo, M. Falocchi, G. Antonacci, P. A. Jiménez, **B. Kosovic**, S. Alessandrini, D. Zardi, L. Delle Monache, E. Ferrerod, 2019: Turbulence

- parameterizations for dispersion in sub-kilometer horizontally non-homogeneous flows. *Atmospheric Research*, **228**, 122-136. <https://doi.org/10.1016/j.atmosres.2019.05.018>
32. Olson, J. B., 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.-W. 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, J. Cline, 2019: Improving Wind Energy Forecasting through Numerical Weather Prediction Model Development. *Bulletin of the American Meteorological Society*, early online release, 10.1175/BAMS-D-18-0040.1
 33. Rai, R., L. Berg, **B. Kosovic**, S. E. Haupt, J. D. Mirocha, B. L. Ennis, C. Draxl, 2019: Evaluation of the Impact of Horizontal Grid Spacing in Terra Incognita on Coupled Mesoscale-Microscale Simulations Using the WRF Framework. *Monthly Weather Review*, **147**, 1007-1027, 10.1175/MWR-D-18-0282.1
 34. Saide, P. E., D. Steinhoff, **B. Kosovic**, J. Weil, N. Downey, D. Blewitt, S. Hanna, L. Delle Monache, 2018: Evaluating methane emission estimation methods based on atmospheric measurements from oil and gas production using LES simulations. *Environmental Science and Technology*, **52**, 11206-11214.
 35. Jimenez, P. A., D. Muñoz-Esparza, and **B. Kosović**, 2018: A high resolution coupled fire-atmosphere forecasting system to minimize the impacts of wildland fires: Applications to the Chimney Tops II wildland event. *Atmosphere*, **9**, 197-206. DOI: 10.3390/atmos9050197
 36. Muñoz-Esparza, D., and **B. Kosović**, 2018: Generation of inflow turbulence in large-eddy simulations of non-neutral atmospheric boundary layers with the cell perturbation method. *Monthly Weather Review*, **146**, 1889-1909. DOI: 10.1175/MWR-D-18-0077.1
 37. Muñoz-Esparza, D., **B. Kosović**, P. A. Jiménez, and J. L. Coen, 2018: An accurate fire-spread algorithm in the Weather Research and Forecasting model using the level-set method. *Journal of Advances in Modeling Earth Systems*, **10**, 908-926. doi: 10.1002/2017MS001108.
 38. Chu, X., L. Xiu, B. Geerts, **B. Kosović**, 2018: The impact of boundary layer turbulence on snow growth and precipitation: Idealized Large Eddy Simulations. *Atmospheric Research*, **204**, 54-66, <https://doi.org/10.1016/j.atmosres.2018.01.015>.
 39. Mirocha, J. D., M. J. Churchfield, D. Muñoz-Esparza, R. K. Rai, Y. Feng, **B. Kosović**, S. E. Haupt, B. Brown, B. L. Ennis, C. Draxl, J. S. Rodrigo, W. J. Shaw, L. K. Berg, P. J. Moriarty, R. R. Linn, V. R. Kotamarthi, R. Balakrishnan, J. W. Cline, M. C. Robinson, and S. Ananthan, 2018: Large-Eddy Simulation Sensitivities to Variations of Configuration and Forcing Parameters in Canonical Boundary-Layer Flows for Wind Energy Applications. **3**, 589–613. *Wind Energy Science*. <https://doi.org/10.5194/wes-2017-33>.
 40. Haupt, S. E., **B. Kosović**, T. Jensen, J. K. Lazo, J. A. Lee, P. A. Jimenez, J. Cowie, G. Wiener, and T. C. McCandless, 2018: Building the Sun4Cast System: Improvements in Solar Power Forecasting. *Bulletin of American Meteorological Society*, **99**, 121-135.
 41. Rai, R., L. K. Berg, M. Pekour, W. J. Shaw, **B. Kosovic**, J. D. Mirocha, B. L. Ennis, 2017: Spatiotemporal Variability of Turbulence Kinetic Energy Budgets in the Convective

Boundary Layer over Both Simple and Complex Terrain. *Journal of Applied Meteorology and Climatology*, **56**, 3285-3302.

42. Haupt, S. E., S. Dettling, J. K. Williams, J. Pearson, T. Jensen, T. Brummet, **B. Kosovic**, G. Wiener, T. McCandless, C. Burghardt, 2017: Blending distributed photovoltaic and demand load forecasts. *Solar Energy*, **157**, 542-551.
43. Marjanovic, N., J. D. Mirocha, **B. Kosovic**, J. K. Lundquist, F. K. Chow, 2017: Implementation of a generalized actuator line model for wind turbine parameterization in the Weather Research and Forecasting model. *Journal of Renewable and Sustainable Energy*, **9**, No. 063308. <https://doi.org/10.1063/1.4989443>
44. Muñoz-Esparza, D., J. K. Lundquist, J. A. Sauer, **B. Kosović**, 2017: Coupled mesoscale-LES modeling of a diurnal cycle during the CWEX-13 field campaign: From weather to boundary-layer eddies. *Journal of Advances in Modeling Earth Systems*, **9**, 1572-1594, doi:10.1002/2017MS000960.
45. Lee, J., J. P. Hacker, L. Delle Monache, **B. Kosovic**, and A. Clifton, F. Vanderberghe, J. Sanz Rodrigo, 2017: Improving Wind Predictions in the Marine Atmospheric Boundary Layer through Parameter Estimation in a Single-Column Model. *Monthly Weather Review*, **145**, 5-24, DOI: <http://dx.doi.org/10.1175/MWR-D-16-0063.1>.
46. Haupt, S. E., **B. Kosovic**, 2017: Variable Generation Power Forecasting as a Big Data Problem. *IEEE Transactions on Sustainable Energy*, **8**, DOI: 10.1109/TSTE.2016.2604679.
47. Rai, R. K., L. K. Berg, **B. Kosović**, J. D. Mirocha, M. S. Pekour, W. J. Shaw, 2016: Comparison of Measured and Numerically Simulated Turbulence Statistics in a Convective Boundary Layer Over Complex Terrain. Published online 25 November 2016 in *Boundary-Layer Meteorology*, doi:10.1007/s10546-016-0217-y.
48. Sanz Rodrigo, J., R. A. Chávez Arroyo, P. Gancarski, P. Moriarty, M. Churchfield, A. Clifton, **B. Kosović**, P-E. Réthoré, K. S. Hansen, A. Hahmann, J. Mann, J. D. Mirocha, D. Rife, 2016: Mesoscale to microscale wind farm flow modelling and evaluation. Published online Aug 31 2016 in *WIREs Energy Environ*, doi: 10.1002/wene.214.
49. Sanz Rodrigo, J., M. Churchfield, and **B. Kosovic**, 2016: Atmospheric boundary layer modeling based on mesoscale tendencies and data assimilation at microscale. Published online 19 Aug 2016 in *Wind Energy Science*, doi:10.5194/wes-2016-26.
50. Lundquist, J. K., J. M. Wilczak,... **B. Kosović**,... R. Worsnop, 2016: Assessing state-of-the-art capabilities for probing the atmospheric boundary layer: the XPIA field campaign. *Bulletin of American Meteorological Society*, **98**, 289-314, DOI: <http://dx.doi.org/10.1175/BAMS-D-15-00151.1>.
51. Jimenez, P., S. Alessandrini, S. E. Haupt, A. J. Deng, **B. Kosović**, J. Lee, L. Delle-Monache, 2016: The role of unresolved clouds on short-range global horizontal irradiance predictability. *Monthly Weather Review*, **144**, 3099–3107.
52. Vanderwende, B. J., **B. Kosović**, J. K. Lundquist, J. D. Mirocha, 2016: Simulating effects of a wind-turbine array using LES and RANS. *Journal of Advances in Modeling Earth Systems*, **8**, 1376–1390.

53. Udina, M., J. Sun, **B. Kosović**, M. R. Soler, 2016: Exploring vertical turbulence structure in neutrally and stably stratified flows using WRF-LES model. *Boundary-Layer Meteorology*, **161**, 355–374.
54. Haupt, S. E., **B. Kosović**, 2015: Big Data and Machine Learning for Applied Weather Forecasts: Forecasting Solar Power for Utility Operations. *2015 IEEE Symposium Series on Computational Intelligence*, p. 496 – 501.
55. Mirocha, J. D., D. A. Rajewski, N. Marjanovic, J. K. Lundquist, **B. Kosović**, C. Draxl, M. J. Churchfield, 2015: Investigating wind turbine impacts on near-wake flow using profiling lidar data and large-eddy simulations with an actuator disk model. *Journal of Renewable and Sustainable Energy*, **7**, No. 043143.
56. Muñoz-Esparza, D., J. Sauer, R. Linn, **B. Kosović**, 2015: Limitations of One-Dimensional Mesoscale PBL Parameterizations in Reproducing Mountain-Wave Flows. *Journal of the Atmospheric Sciences*, **73**, 2603-2614.
57. Muñoz-Esparza, D., **B. Kosović**, J. D. Mirocha, J. van Beeck, 2015: A stochastic perturbation method to generate inflow turbulence in large-eddy simulation models: Application to neutrally stratified atmospheric boundary layers. *Physics of Fluids*, **27**, No. 035102.
58. Nunalee, C., **B. Kosović**, P. Bieringer, 2014: Eulerian Dispersion Modeling with WRF-LES of Plume Impingement in Neutrally and Stably Stratified Turbulent Boundary Layers. *Atmospheric Environment*, **99**, 571-581.
59. Muñoz-Esparza, D., **B. Kosović**, J. D. Mirocha, J. van Beeck, 2014: Bridging the Transition from Mesoscale to Microscale Turbulence in Numerical Weather Prediction Models. *Boundary-Layer Meteorology*. **153**, 409-440. DOI: 10.1007/s10546-014-9956-9
60. Ching, J., R. Rotunno, M. LeMone, A. Martilli, **B. Kosovic**, P. A. Jimenez, J. Dudhia, 2014: Convectively Induced Secondary Circulations in Fine-Grid Mesoscale Numerical Weather Prediction Models. *Monthly Weather Review*, **142**, 3284-3302. doi:10.1175/MWR-D-13-00318.1
61. Muñoz-Esparza, D., **B. Kosović**, C. Garcia-Sanchez, J. van Beeck, 2014: Nesting turbulence in an offshore convective boundary layer using large-eddy simulations. *Boundary-Layer Meteorology*. **151**, 453-478.
62. Aitken, M. L., **B. Kosović**, J. D. Mirocha, J. K. Lundquist, 2014: Large eddy simulation of wind turbine wake dynamics in the stable boundary layer using the Weather Research and Forecasting Model. *Journal of Renewable and Sustainable Energy*, **6**, 033137, (2014); <http://dx.doi.org/10.1063/1.4885111>
63. Mirocha, J. D., **B. Kosovic**, M. L. Aitken, J. K. Lundquist, 2014: Implementation of a generalized actuator disk wind turbine model into the weather research and forecasting model for large-eddy simulation applications. *Journal of Renewable and Sustainable Energy*, **6**, 013104 (2014); <http://dx.doi.org/10.1063/1.4861061>
64. Mirocha, J., **B. Kosović**, G. Kirkil, 2014: Resolved Turbulence Characteristics in Large-Eddy Simulations Nested within Mesoscale Simulations Using the Weather Research and Forecasting Model. *Monthly Weather Review*, **142**, 806–831. doi: <http://dx.doi.org/10.1175/MWR-D-13-00064.1>

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MANUSCRIPTS UNDER REVIEW:

Rohanizadegan, M., R. M. Petrone, J. W. Pomeroy, **B. Kosovic**, D. Muñoz-Esparza, and W. D. Helgason, 2021: High Resolution Large-Eddy Simulations of Flow in the Complex Terrain of the Canadian Rockies. Under review for publication in *JGR Atmospheres*.

Veers, P., K. Dykes, S. Basu, A. Bianchini, A. Clifton, P. Green, H. Holttinen, **B. Kosović**, J. K. Lundquist, Johan Meyers, Mark O'Malley, William J Shaw, Bethany Straw, 2022: Grand Challenges: Wind energy research needs for a global energy transition. *Wind Energy Science Discussions*.

BOOK CHAPTERS:

Kosović, B., T. Juliano, A. DeCastro, M. Frediani, A. Anderson, P. Jimenez, D. Muñoz-Esparza, J. Knievel, 2022: Wildfires. *Extreme Weather Forecasting*, Marina Astitha and Efthymios Nikolopoulos, Ed., Elsevier, 2022, in print.

Jimenez, P.A., J.A. Lee, **B. Kosovic**, and S.E. Haupt, 2018: Solar Resource Evaluation with Numerical Weather Prediction Models, in Solar Resources, A. Sanfilippo, L. Pomares, J. Polo, Ed, Springer, 2018.

Haupt, S.E., S. McIntosh, **B. Kosovic**, K. Miller, D. Yates, F. Chen, M. Shepherd, M. Williams, and S. Drobot, 2018: 100 Years of Progress in Applied Meteorology, Part 3: Modern Applications, in 100 Years of Scientific Research at AMS, AMS Monograph Series, Boston, MA, 2018.

Haupt, S.E., **B. Kosovic**, J.A. Lee, and P. Jimenez, 2018: Mesoscale Modeling of the Atmosphere, in Modeling and Simulation in Wind Plant Design and Analysis, P. Veers, Ed., IET Press, 2018.

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TECHNICAL REPORTS AND NON-PEER REVIEWED PUBLICATIONS:

Haupt, S.E., A. Anderson, L. Berg, B. Brown, M. Churchfield, C., Draxyl, C. Kalb, E. Koo, **B. Kosovic**, R. Kotamarthi, L. Mazzaro, J. Mirocha, E. Quon, R. Rai, G. Sever, 2018: Third Year Report of the Atmosphere to Electrons Mesoscale to Microscale Coupling Project., Pacific Northwest Laboratory Report PNNL-XXXXX, 137 pp.

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Kosović, B., 2017: Large-eddy simulation of atmospheric flows. In von Karman Institute Lecture Series 2017-01, “CFD for atmospheric flows and wind engineering,” eds., C. Benocci and J. P. A. J. van Beeck, von Karman Institute for Fluid Dynamics, Belgium, 2017.

Haupt, S.E., **B. Kosovic**, T. Jensen, J. Lee, P. Jimenez, J. Lazo, J. Cowie, T. McCandless, J. Pearson, G. Weiner, S. Alessandrini, L. Delle Monache, D. Yu, Z. Peng, D. Huang, J. Heiser, S. Yoo, P. Kalb, S. Miller, M. Rogers, and L. Hinkleman, 2016: The SunCast Solar Power Forecasting System: The Results of the Public-Private-Academic Partnership to Advance Solar Power Forecasting. NCAR Technical Report TN-526+STR, 307 pp, doi:10.5065/D6N58JR2.

Haupt, S.E., A. Anderson, L. Berg, B. Brown, MJ Churchfield, C Draxl, B.L. Ennis, Y. Fang, **B. Kosovic**, R. Kotamarthi, R. Linn, J.D. Mirocha, P. Moriarty, D. Munoz-Esparaza, R. Rai,

W.J. Shaw, 2015: First Year Report of the A2e Mesoscale to Microscale Coupling Project, Pacific Northwest Laboratory Report PNNL-25108, 124 pp.

Mirocha, J. D., J. K. Lundquist, F. K. Chow, **B. Kosović**, 2008: Description of new LES subfilter turbulence models implemented into WRF ARW V3.0.1 LLNL Technical Report LLNL-TR-408080.

Wissink, A., **B. Kosović**, M. Berger, K. Chand, and F. K. Chow, 2008: “Adaptive Cartesian Methods for Modeling Airborne Dispersion.” *Advanced Computational Infrastructures for Parallel and Distributed Adaptive Applications*, Eds. Manish Parashar, Sumir Chandra, Xiaolin Li.

Kosović, B., Belles, R., Chow, F.K., Delle Monache, L., Dyer, K., Glascoe, L., Hanley, W., Johannesson, G., Larsen, S., Loosmore, G., Lundquist, J.K., Nitao, J., Neuman, S., Mirin, A., Serban, R., Sugiyama, G., Aines, R., 2007: Dynamic Data-Driven Event Reconstruction for Atmospheric Releases. LLNL Technical report UCRL-TR-229417.

Lundquist, J. K., **B. Kosović**, and R. Belles, 2005: Synthetic Event Reconstruction Experiments for Defining Sensor Network Characteristics. LLNL Technical report, UCRL-TR-217762 <http://www.llnl.gov/tid/lof/documents/pdf/328798.pdf>.

Sugiyama, G., Kosović, B., Hanley, W., Johannesson, G., Larsen, S., Loosmore, G., Lundquist, J., Mirin, A., Nitao, J., Dyer, K., 2004: Dynamic Data-Driven Event Reconstruction for Atmospheric Releases. LLNL Technical report UCRL-TR-207559.

Sohn, M., Gadgil, A., Kosović, B., Sugiyama, G., 2003: Sensor-Driven Modeling Capability for Determining Unknown Sources. LLNL Technical report UCRL-TR-201540.

CONFERENCE PREPRINTS:

Lundquist, J. K., Mirocha, J. D., and Kosović, B., 2010: Nesting large-eddy simulations within mesoscale simulations in WRF for wind energy applications. Fifth International Symposium on Computational Wind Engineering, Chapel Hill, NC, May 23-27, 2010.

Mirocha, J. D., and Kosović, B., 2006: Consequences of the Large-Scale Subsidence Rate on the Stably Stratified Atmospheric Boundary Layer Over the Arctic Ocean, as seen in Large-Eddy Simulations. 17th Symposium on Boundary Layers and Turbulence, San Diego, CA, May 22-26, 2006.

Chow, F. K., Kosović, B., and Chan, S.T., 2006: Source inversion for contaminant plume dispersion in urban environments using building resolving simulations. 86th Annual American Meteorological Society Meeting, Atlanta, GA, January 29 – February 2, 2006.

Neuman, S., Glascoe, L., Kosović, B., Dyer, K., Hanley, W., Nitao, J., Gordon, R., 2006: Event Reconstruction with the Urban Dispersion Model. 86th Annual American Meteorological Society Meeting, Atlanta, GA, January 29 – February 2, 2006.
(undergraduate student first author)

Johannesson, G., Chow, F.K., Glascoe, L., Glaser, R.E., Hanley, W.G., Kosovic, B., Krnjajic, M., Larsen, S.C., Lundquist, J.K., Nitao, J.J., Mirin, A.A., 2005: Sequential Monte-Carlo

Based Framework for Dynamic Data-Driven Event Reconstruction for Atmospheric Releases. Joint Statistics Meeting, Minneapolis, MN, August 7-11, 2005.

Kosović, B., and Lundquist, J.K., 2004: Influences on the height of the stable boundary layer as seen in LES. 16th Symposium on Boundary Layers and Turbulence, Portland, ME, August 9-14, 2004.

Mirocha, J.D., Kosović, B., and Curry, J.A., 2004: Vertical heat transfer in the lower atmosphere over the Arctic Ocean during clear-sky periods. 16th Symposium on Boundary Layers and Turbulence, August 9-14, Portland, ME, 2004.

RECENT INVITED PRESENTATIONS:

Kosović, B., 2022: Toward actionable wildland fire prediction enabled by high-performance computing, High Performance User Forum Meeting, March 30, 2022.

Kosović, B., 2022: Parameterization of surface interactions and turbulence at the atmosphere – ocean interface for improved prediction of rotor plane winds. Department of Energy Workshop on Air-Sea Interactions and Implications for Wind Energy, February 10, 2022.

Kosović, B., 2021: Recent developments in wildland fire modeling with WRF-Fire including firebrand transport. 2021 Fire Weather Workshop, San Jose State University, April 9, 2021.

Kosović, B., 2020: Planetary Boundary Layer – Applications, NASA Planetary Boundary Layer Workshop, May 26, 2020.

Kosović, B., 2018: Turbulence Generation in Coupled Mesoscale to Microscale Simulations. Deutsche Luft und Raumfahrt Institute, November 12, 2018.

Kosović, B., 2018: Three-Dimensional Planetary Boundary Layer Parametrization for High-Resolution Mesoscale Simulations of Flows over Complex Terrain. University of Innsbruck, Department of Atmospheric Sciences, December 11, 2018.

Kosović, B., 2017: Large – Eddy Simulations of Atmospheric Flows. Invited lecture series, Von Karman Institute Lecture Series in Waterloo, Belgium, February 24, 2017.

Kosović, B., 2016: Solar Power Forecasting: Methods, Challenges, and Performance. EPRI ANNSTLF Users' Workshop, Denver, CO, November 2-3, 2016.

Kosović, B., 2016: A Public-Private-Academic Partnership to Advance Solar Power Forecasting. CAISO Workshop, Folsom, CA, May 12, 2016.

Kosović, B., 2015: Toward Multiscale Simulations of Atmospheric Flows. Invited talks, Los Alamos, NM, July 22, 2015.

Kosović, B., 2015: Toward Multiscale Simulations of Atmospheric Flows. Invited lecture series, Von Karman Institute Lecture Series in Waterloo, Belgium, February 11, 2015.

Kosović, B., 2013: Toward Multiscale Simulations of Atmospheric Flows. Argonne National Laboratory Workshop on Atmospheric Modeling at LES Scales, Chicago, IL, September 4-5, 2013.

Kosović, B., 2013: Science Needs for U.S. Offshore Energy Development. American Geophysical Union, Science Policy Conference, Washington, D. C., June 24-26, 2013.

Kosović, B., 2013: Boundary Layer Research for Wind Energy Applications. Wind Energy Symposium, University of Delaware, February 27, 2013.

Kosović, B., 2012: Scale interaction (Bridging the scale gap between mesoscale and microscale." 16th George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 17-18, 2012.

RECENT CONFERENCE PRESENTATIONS:

Kosović, B., and P. A. Jimenez, 2018: Assessment of High-Resolution Simulations of Flow Over Complex Terrain. 18th Conference on Mountain Meteorology, Santa Fe, June 25-29, 2018.

Kosović, B., P. A. Jimenez, A. Martilli, S. E. Haupt, J. Olson, J.-W. Bao, 2018: Three-Dimensional Planetary Boundary Layer Parameterization for High-Resolution Mesoscale Simulations of Flows over Complex Terrain. 23rd Symposium on Boundary Layers and Turbulence, Oklahoma City, OK, June 11-15, 2018.

Kosović, B., D. Muñoz-Esparza, Pedro Jiménez, Amanda Anderson, Amy DeCastro, and Barbara Brown, 2018: Forecasting coupled atmosphere wildland fire behavior using high-resolution large-eddy simulations with WRF-Fire. 12th Fire and Forest Meteorology Symposium.

Kosović, B., P. A. Jimenez, A. Martilli, S. E. Haupt, J. Olson, J.-W. Bao, 2017: Recent developments and assessment of a 3D PBL parameterization for improved wind forecasting over complex terrain. 2017 AGU Fall Meeting, New Orleans, December 11-15, 2017.

Kosović, B., J. D. Mirocha, M. J. Churchfield, D. Muñoz-Esparza, R. Rai, Y. Fang, S. E. Haupt, B. Brown, B. L. Ennis, 2017: Assessment of Large-Eddy Simulations of the Atmospheric Boundary Layer for Wind Energy Applications. WindTech Conference, Boulder October 24-26, 2017.

Kosović, B., P. A. Jimenez, S. E. Haupt, J. Olson, J.-W. Bao, E. D. Grell, and J. Kenyon, 2017: Evaluation of A 3D PBL Parameterization for Simulations of a Flow Over Complex Terrain. 18th Annual WRF Users' Workshop, Boulder, June 12-16, 2017.

Kosović, B., P. Jimenez Muñoz, S. E. Haupt, J. Olson, J-W Bao, E. D. Grell, and J. Kenyon, 2016: A 3D PBL Parameterization for High-resolution Mesoscale Simulations over Heterogeneous and Complex. Fall Meeting of the American Geophysical Union, San Francisco, December 11-15, 2016.

Kosović, B., D. Muñoz Esparza, and J. Sauer, 2016: Improving Spectral Resolution of Finite Difference Schemes for Multiscale Modeling Applications Using Numerical Weather Prediction Model. American Meteorological Society Symposium on Boundary Layers and Turbulence, Salt Lake City, June 20-24, 2016.

Kosović, B., et al., 2015: Short- and long-term forecasting system for effective integration of wind energy into the grid. Invited presentation at the WILL4WIND Workshop, Šibenik, Croatia, June 10-11, 2015.

Kosović, B., et al., 2015: Xcel/NCAR Variable Generation Forecasting Project Update. Utility Variable Integration Group Forecasting Workshop, Denver, February 19, 2015.

Kosović, B., S. E. Haupt, S. Drobot, 2014: Advances in Solar Power Forecasting. American Geophysical Union, Fall Meeting, San Francisco, December 15, 2014.

Kosović, B., J. D. Mirocha, K. A. Lundquist, 2014: Validation of Large-Eddy Simulations of Flows Over Complex Terrain with the Weather Research and Forecasting Model, 21st American Meteorological Society Symposium on Boundary Layers and Turbulence, Leeds, U. K., June 9-13, 2014.

Kosović, B., E. Patton, P. Sullivan, J. Dudhia, L. Mahrt, M. Žagar, and L. Gulstad, 2013: Hub-height wind speed in the marine boundary layer under stable stratification. North American Wind Energy Academy Symposium, University of Colorado, Boulder, CO, August 6-8, 2013.

Kosović, B., 2013: Large-Eddy Simulations of Stably-Stratified Atmospheric Boundary Layers. Geophysical Turbulence Program Workshop on Large-Eddy Simulations and Magnetohydrodynamic Turbulence, Boulder, CO, May 20-23, 2013.

Kosović, B., G. H. Bryan, S. E. Haupt, 2012: Shear and Turbulence Estimates for Calculation of Wind Turbine Loads and Responses Under Hurricane Strength Winds. American Geophysical Union Fall Meeting, San Francisco, CA, December 4-7, 2012.

Kosović, B., Mirocha, J. D., Lundquist, K. A., 2012: Toward High-resolution Multiscale Simulations of Flows in Heterogeneous Atmospheric boundary Layers. 20th Symposium on Boundary Layers and Turbulence, Boston, MA, July 9-13, 2012.

Kosović, B., G. Young, K. Schmehl, D. Truesdell, S. E. Haupt, A. Annunzio, L. Rodrigues, 2012: Survey of Evolutionary and Probabilistic Approaches for Source Term Estimation. Fukushima Workshop on Source Term Estimation Methods for Estimating Radiation Release from the Fukushima Dai-Ichi Nuclear Plant, Boulder, CO, February 22-23, 2013.

Kosović, B., Mirocha, J. D., Singer, M., Glascoe, L., 2012: Large-Eddy Simulation of a Wind Turbine Array Using the Weather Research and Forecasting Model. 92nd Annual Meeting of the American Meteorological Society, New Orleans, LA, January 22-26.

Kosović, B., Lundquist, K. A., 2011: Large-Eddy Simulations of Flows in Complex Terrain. American Geophysical Union Fall Meeting, December 5-9, 2011.

Kosović, B., Bieringer, P., Weil, J., Wyszogrodski, A., and Bieberbach, G., 2010: High resolution boundary layer dispersion simulation study using Eulerian and Lagrangian approaches with WRF, 19th Symposium on Boundary Layers and Turbulence, Keystone, CO, August 2-6, 2010.

Kosović, B., and Warner, T., 2010: Fine-scale Atmospheric Modeling at NCAR. Fifth International Symposium on Computational Wind Engineering, Chapel Hill, NC, May 23-27, 2010.

Kosović, B., and Mirocha, J., 2009: Toward Large-Eddy Simulations of Dense Gas Dispersion in Complex Terrain. 8th Symposium on Urban Environment, 89th Annual Meeting of the American Meteorological Society, Phoenix, AZ, January 11-15, 2009.

Kosović, B., Delle Monache, L., Cameron-Smith, P., Bergmann, D., Grant, K., and Guilderson, T., 2008: Toward Regional Fossil Fuel CO₂ Emissions Verification Using WRF-CHEM. 9th WRF Users' Workshop, Boulder, CO, June 23 - 27, 2008.

Kosović, B., and Mirocha, J., 2008: Toward Large-Eddy Simulations of Density Currents Over Complex Terrain. 18th Symposium on Boundary Layers and Turbulence, Stockholm, Sweden, June 9-13, 2008.

Kosović, B., 2006: Some Questions and Ideas About the Role of Simulation in Studying Stable Atmospheric Boundary Layers. Workshop on Stable Boundary Layers, Sedona, AZ, November 13-16, 2006.

Kosović, B., and Sugiyama, G., 2005: Stochastic Source Inversion Methodology and Optimal Sensor Network Design. 9th George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 18-20, 2005.

Kosović, B., Sugiyama, G., Dyer, K., Glascoe, L., Hanley, W., Johannesson, G., Larsen, S., Loosmore, G., Lundquist, J.K., Nitao, J., Mirin, A., and Serban, R., 2004: Dynamic Data-Driven Event Reconstruction for Atmospheric Releases. 8th Annual George Mason University Transport and Dispersion Modeling Conference, Fairfax, VA, July 13-15, 2004.

Kosović, B., Wissink, A., Chan, T.S., and Hornung, R., 2004: Integrated urban dispersion modeling capability. Annual Meeting of American Meteorological Society, Seattle, WA, January 11-16, 2004.

Kosović, B., and Poulos, G., 2002: Toward large-eddy simulations of strongly-stratified atmospheric boundary layers. 15th Symposium on Boundary Layers and Turbulence, Wageningen, Netherlands, July 15-20, 2002.

TEACHING

1995 University of Colorado – CHEN-1310, Introduction to Engineering Computing

1998 University of Colorado – APS-7500, Introduction to Boundary Layer Meteorology

2001 University of California at Berkeley – MAT21B, Calculus II

Reviewer of papers for:

Acta Geophysica,

Atmosphere,

Atmospheric Chemistry and Physics,

Atmospheric Environment,

Boundary-Layer Meteorology,

Bulletin of American Meteorological Society,

Computers and Fluids,

Dynamics of Atmospheres and Oceans,

Energies,
Environmental Fluid Mechanics,
Environmental Modeling and Assessment,
Environmental Research Letters,
Geophysical Model Development,
International Journal of Wildland Fire,
Journal of Applied Meteorology and Climatology,
Journal of Climate,
Journal of Geophysical Research: Atmospheres
Journal of the Atmospheric Sciences,
Journal of Fluid Mechanics,
Journal of Turbulence,
Journal of Wind Engineering,
Monthly Weather Review,
Physics of Fluids,
Pure and Applied Geophysics,
Quarterly Journal of the Royal Meteorological Society,
Wind Energy

Reviewer of proposals for:

Department of Energy
National Science Foundation
Natural Environment Research Council, United Kingdom
Netherlands Organisation for Scientific Research, Netherlands
Swiss National Science Foundation

Ph. D. Committee Member / Ph. D. Thesis Reviewer:

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Mark Piper (University of Colorado)
Christopher Nunalee (North Carolina State)
Domingo Muñoz-Esparza (von Karman Institute)
Matthew Aitken (University of Colorado)
Serena Falasca (University of Rome)
Brian Vanderwende (University of Colorado)
Mireia Udina (University of Barcelona)
Yao Wang (North Carolina State)
Patrick Hawbecker (North Carolina State)
Rochelle Worsnop (University of Colorado)
Laura Mazzaro (University of Colorado)
Stefanie Redfern (University of Colorado)
Nicholas Luccheti (University of Colorado)
Alex Rybchuk (University of Colorado)
Mukesh Kumar (University of California at Irvine)
Matthew Roberts (University of Nevada)
Fernando Jose Szasdi Bardales (University of Buffalo)

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Kyle Pressel (University of California at Berkeley)
Domingo Muñoz-Esparza (von Karman Institute, Belgium)
Jesper Pedersen (Technical University of Denmark)
Serena Falasca (University of Rome, Italy)
Elena Tomasi (University of Trento, Italy)
Mina Rohanidazegan (University of Waterloo, Canada)

Undergraduate Student Mentor:

Stephanie Neuman (University of California at Los Angeles)

High School Student Mentor:

Alexei Kazantsev (Fairview High School, Boulder, Colorado)