

# Curriculum Vitae

**NAME** – Jens Oberheide

## **PERSONAL DATA**

Professor  
Department of Physics and Astronomy  
Clemson University  
Clemson, SC 29634-0978  
864/656-5163

January 24, 1969  
Springe, Lower Saxony, Germany  
U.S. and German Citizen

## **EDUCATION**

Habilitation, University of Wuppertal, Germany, 2007, Physics.  
Ph.D., University of Wuppertal, Germany, 2000, Physics.  
Diploma, University of Hannover, Germany, 1996, Physics.

## **PROFESSIONAL EXPERIENCE**

Clemson University, 2015- , Professor of Physics  
Clemson University, 2010-2015, Associate Professor of Physics (early tenure in 2014).  
University of Wuppertal, 2007-2010, Privatdozent (Research Professor of Physics).  
University of Wuppertal, 2003-2007, Research Scientist.  
National Center for Atmospheric Research, Boulder CO, 2001-2003, Postdoc.  
University of Wuppertal, 2001-2001, Postdoc.

## **MEMBERSHIPS**

Member, American Geophysical Union, AGU, (1998-present).  
Member, American Meteorological Society, SC Upstate Chapter, AMS, (2010-present).  
Member, American Association for the Advancement of Science, AAAS (2021-present).

## **PROFESSIONAL ACTIVITIES**

### **Science Strategy and Advisory**

NASA LWS Program, Lead of a Focused Science Topic (2023-present), national.  
UCAR/COSMIC Program, Scientific Advisory Board, (2022-present), national.  
AGU, Fellowship Selection Committee for SPA section, (2023-present), national.  
NASA/SMD, Panelist, Independent Review Board for the GDC mission, (2022),  
national.  
Czech Republic Academy of Sciences, Panelist, 2015-2019 evaluation, (2020),  
international.  
NSF-CEDAR Science Steering Committee, (2019-2022), national.

National Research Council (NRC), Panelist, Midterm Assessment of the 2013-2022 Decadal Survey on Solar and Space Physics, (2019), national.  
Ministry for Education, Science and Culture, State of Mecklenburg-Vorpommern in Germany, Scientific Steering Committee (wissenschaftlicher Beirat) Leibniz Institute for Atmospheric Physics Kühlungsborn, (2018-2022), international.  
National Research Council (NRC), Panelist, 2013-2022 Decadal Survey on Solar and Space Physics, (2010-2012), national.  
Scientific Committee on Solar-Terrestrial Physics (SCOSTEP), Scientific Advisory Board, (2012-2013), international.  
NASA, Panelist, Senior Review 2009-2012 for the Heliophysics Operating Satellite Missions, (2008), national.  
Scientific Committee on Solar-Terrestrial Physics (SCOSTEP), Leader Task 4 of the Climate and Weather of the Sun-Earth System Program, (2009-2013), international.

### **Editorships**

American Geophysical Union (AGU), Associate Editor, Journal of Geophysical Research – Atmospheres, (2005-2007, 2009-2022), national.  
Elsevier, Guest Editor, Journal of Solar-Terrestrial Physics (JASTP): Special Issue on CRISTA 1 & 2 Results in the Mesosphere and Lower Thermosphere, (2006), international.

### **Proposal Review Panels**

NASA, Panelist, Multiple Programs, (2004-present), national.  
NSF, Panelist, Multiple Programs, (2010-present), national  
UCAR (University Collaboration for Atmospheric Research), Panelist, NASA Jack Eddy Postdoctoral Program, (2013-2019), national.  
Federal Ministry of Education and Research (Germany), Panelist, “Role of the Middle Atmosphere in Climate (ROMIC)” Research Program, (2012), international.  
German Science Foundation (DFG, Germany), Panelist, Priority Program “Dynamic Earth”, (2018), international.  
German Science Foundation (DFG, Germany), Panelist, Priority Program “SWARM satellite mission”, (2012), international.

### **Conference Session Organization**

American Geophysical Union (AGU) Fall Meeting, Convener, Session SA010 “Impact of terrestrial weather on the ITM”, San Francisco, CA (2023), international.  
NSF-CEDAR, Convener, Workshop “CEDAR Science Past the Next Decade – A Long-Term Vision”, held online, (2020), national.  
NSF-CEDAR, Convener, Workshop “CEDAR and Decadal Survey”, Santa Fe, NM (2019), national.  
NSF-CEDAR, Convener, Workshop “Whole atmosphere coupling: research challenges and needs”, Santa Fe, NM, (2018), national.  
Committee on Space Research (COSPAR), Deputy Scientific Organizer, Session C2.2 “Wave Coupling Processes and Consequences in the Whole Atmosphere”, Pasadena, CA, USA, (2018), international.

American Geophysical Union (AGU) Fall Meeting, Convener, Session SA51B/52A/53B/54A “Vertical Wave Coupling into the Ionosphere-Thermosphere-Mesosphere System”, San Francisco, CA, (2014), international.

Committee on Space Research (COSPAR), Deputy Scientific Organizer, Session C2.2 “Wave coupling processes in the whole atmosphere”, Moscow, Russia, (2014), international.

CAWSES-II Symposium, Convener, Session SS-4 “Geospace response to lower atmospheric waves”, Nagoya, Japan, (2013), international.

CAWSES-II Symposium, Convener, Panel-2 “Variability of the Sun-Earth System”, Nagoya, Japan, (2013), international.

Committee on Space Research (COSPAR), Main Scientific Organizer, Session C2.2 “Whole atmosphere wave coupling and interaction processes”, Mysore, India, (2012), international.

NSF-CEDAR, Convener, Workshop “MLT and thermosphere response to large-scale wave activity”, Santa Fe, NM, (2012), national.

Committee on Space Research (COSPAR), Main Scientific Organizer, Session C2.2 “Troposphere-Ionosphere Multi-Scale Wave Coupling Processes”, Bremen, Germany, (2010), international.

Committee on Space Research (COSPAR), Organizing Committee, Session C2.2 “Multi-Scale Wave Coupling and Energetics from the Troposphere to the Ionosphere”, Montreal, Canada, (2008), international.

International Symposium on Equatorial Aeronomy (ISEA-12), Co-Convener, Session S4 “Equatorial and Mid-Latitude MLT Dynamics”, Heraklion, Greece, (2008), international.

European Geophysical Union (EGU), Co-Convener, Session AS4.06/ST15 “Joint Session of the MLT and the CAWSES Program”, Vienna, Austria, (2008), international.

European Geophysical Union (EGU), Co-Convener, Session AS1.12/ST15 “Joint Session of the MLT and the CAWSES Program”, Vienna, Austria, (2007), international.

European Geophysical Union (EGU), Convener, Session ST5.3 “Coupling Processes in the Middle Atmosphere, Thermosphere and Ionosphere”, Vienna, Austria, (2006), international.

European Geophysical Union (EGU), Convener, Session ST20 “Coupling Between the Middle Atmosphere and Thermosphere/Ionosphere on Earth and other Planets or Moons”, Vienna, Austria, (2005), international.

### **Journal Reviews**

Various Journals, Reviewer, JGR, GRL, JASTP, Ann. Geophys., CJP, Adv. Space Research, Earth Planets Space, Radio Science, etc., (1999-present), national/international.

## **PUBLICATIONS**

### **Books and Monographs - Chapters**

1. Gasperini, F. and **J. Oberheide**  
*Atmospheric Tides*  
 In: Encyclopedia of Atmospheric Sciences, 3<sup>rd</sup> Edition, submitted, 2023.

2. **Oberheide, J.**, M. E. Hagan, A. D. Richmond, and J. M. Forbes  
*Atmospheric Tides*  
In: Gerald R. North (editor-in-chief), John Pyle and Fuqing Zhang (editors),  
Encyclopedia of Atmospheric Sciences, 2nd Edition, Vol. 2, pp. 287-297, ISBN  
9780123822253, Elsevier, doi:10.1016/B978-0-12-382225-3.00409-6, 2015.
3. Häusler, K., **J. Oberheide**, H. Lühr, and R. Koppmann  
*The Geospace Response to Nonmigrating Tides*  
In F.-J. Lübken (Ed.), Climate and Weather of the Sun-Earth System (CAWSES):  
Highlights from a Priority Program, pp 481-506, Springer Atmospheric Sciences,  
2012.
4. Ward, W. E., **J. Oberheide**, M. Riese, P. Preusse, and D. Offermann  
*Planetary Wave Two Signatures in CRISTA-2 Ozone and Temperature Data*  
Atmospheric Science Across the Stratopause, AGU Geophys. Monograph, 123, 319-  
325, 2000.

**Refereed Journal Publications (total: 93; Clemson: 50; \*: student, \*\*: postdoc)**

ISI Web of Science: h-index=34, number of citations=3077 [C-6156-2011](#).

Google Scholar: h-index=39, number of citations=4150

<https://scholar.google.com/citations?user=GPjxYN8AAAAJ>

1. **Oberheide, J.**, X. Lu, and D. \*Aggarwal  
*A statistical study of the day-to-day variability of diurnal and semidiurnal tides in the  
ionospheric dynamo region from MIGHTI/ICON observations*  
J. Geophys. Res. Space Physics, 2024JA032619, submitted, 2024
2. \*\*Zhang, J., **J. Oberheide**, N. Pedatella, and G. Liu  
*Impact of Arctic and Antarctic Sudden Stratospheric Warmings on Thermospheric  
Composition*  
J. Geophys. Res. Space Physics, 2024JA032562, submitted, 2024
3. Khadka, S., F. Gasperini, C. Stolle, and **J. Oberheide**  
*Large-Scale Wave-Driven Interactions and Plasma-Neutral Coupling in the Low-  
Latitude Ionosphere-Thermosphere*  
J. Geophys. Res. Space Physics, 2024JA032535, submitted, 2024
4. Becker, E., and **J. Oberheide**  
*Unexpected DE3 tide in the southern summer mesosphere*  
Geophys. Res. Lett., 50, e2023GL104368, doi:10.1029/2023GL104368, 2023
5. \*\*Zhang, J., **J. Oberheide**, N. Pedatella, and N. Koushik  
*Mesospheric water vapor from SABER as a tracer for the residual mean circulation  
during SSW events*  
J. Geophys. Res. Atmos., 128, e2023JD039526, doi:10.1029/2023JD039526, 2023
6. **Oberheide, J.**, S. M. Gardner, and \*M. Neogi  
*Resolving the tidal weather of the thermosphere using GDC*  
Front. Astron. Space Sci., 10:1282261, doi:10.3389/fspas.2023.1282261, 2023
7. Sassi, F., M. Dhadly, **J. Oberheide**, and D. Rowland  
*Requirements on Neutral Wind Observations in the Upper Atmosphere to Advance*

*Thermospheric Predictions*

Bulletin of the AAS, 55(3), doi:10.3847/25c2cfcb.340c375d, 2023

8. **Oberheide, J.**, M. Jones Jr., and **K. Kumari**  
*Resolving the tidal weather of the thermosphere*  
Bulletin of the AAS, 55(3), doi:10.3847/25c2cfcb.4e625f00, 2023
9. Gan, Q., **J. Oberheide**, L. Goncharenko, L. Qian, J. Yue, W. McClintock, and R. Eastes  
*GOLD Synoptic Observations of Quasi-6-Day Wave Modulations of Post-Sunset Equatorial Ionization Anomaly During the September 2019 Antarctic Sudden Stratospheric Warming*  
Geophys. Res. Lett., 50, e2023GL103386, doi:10.1029/2023GL103386, 2023
10. **Koushik, N.**, **J. Oberheide**, and N. M. Pedatella  
*A Lagrangian Study of Tidal Advection of Mesospheric Water Vapor*  
J. Geophys. Res. Atmos., 128, e2022JD037943, doi:10.1029/2022JD037943, 2023
11. **Oberheide, J.**  
*Day-to-day variability of the semidiurnal tide in the F-region ionosphere during the January 2021 SSW from COSMIC-2 and ICON*  
Geophys. Res. Lett., 49, e2022GL100369, doi:10.1029/2022GL100369, 2022
12. Lieberman, R., B. Harding, R. Heelis, N. Pedatella, J. Forbes, and **J. Oberheide**  
*Atmospheric lunar tides in the low latitude thermosphere-ionosphere*  
Geophys. Res. Lett., 49, e2022GL098078, doi:10.1029/2022GL098078, 2022
13. Forbes, J. M., **J. Oberheide**, X. Zhang, C. Cullens, C. R. Englert, B. J. Harding, J. M. Harlander, K. D. Marr, J. J. Makela, and T. J. Immel  
*Vertical coupling by solar semidiurnal tides in the thermosphere from ICON/MIGHTI measurements*  
J. Geophys. Res. Space Physics, 127, e2022JA030288, doi:10.1029/2022JA030288, 2022
14. Vitharana, A., J. Du, X. Zhu, **J. Oberheide**, and W. Ward  
*Numerical Prediction of the Migrating Diurnal Tide Total Variability in the Mesosphere and Lower Thermosphere*  
J. Geophys. Res. Space Physics, e2021JA029588, doi:10.1029/2021JA029588, 2021
15. **Kumari, K.**, **H. Wu**, **A. Long**, X. Lu, and **J. Oberheide**  
*Mechanism Studies of Madden-Julian-Oscillation Coupling into the Mesosphere/Lower Thermosphere Tides using SABER, MERRA-2 and SD-WACCMX*  
J. Geophys. Res. Atmos., 126, e2021JD034595, doi:10.1029/2021JD034595, 2021
16. Liu, G., R. Lieberman, L. Harvey, N. Pedatella, **J. Oberheide**, R. Hibbins, P. Espy, and D. Janches  
*Tidal Variations in the Mesosphere and Lower Thermosphere Before, During, and After the 2009 Sudden Stratospheric Warming*  
J. Geophys. Res. Space Physics, 126, e2020JA028827, doi:10.1029/2020JA028827, 2021
17. **Kumari, K.**, **J. Oberheide**, and X. Lu  
*The Tidal Response in the Mesosphere/Lower Thermosphere to the Madden-Julian*

*Oscillation Observed by SABER*

Geophys. Res. Lett., 47, e2020GL089172, doi:10.1029/2020GL089172, 2020.

18. Eastes, R. W., W. E. McClintock, A. G. Burns, D. N. Anderson, L. Andersson, S. Aryal, S. A. Budzien, X. Cai, M. V. Codrescu, J. T. Correia, R. E. Daniell, K. F. Dymond, S. L. England, F. G. Eparvier, J. S. Evans, H. Foroosh, Q. Gan, K. Greer, D. K. Karan, A. Krywonos, F. I. Laskar, J. D. Lumpe, C. R. Martinis, J. B. McPhate, **J. Oberheide**, O. H. Siegmund, S. C. Solomon, V. Veibel, and T. N. Woods  
*Initial Observations by the Global-scale Observations of the Limb and Disk (GOLD) mission*  
J. Geophys. Res. Space Physics, 125, e2020JA027823, doi:10.1029/2020JA027823, 2020.
19. Krueger, D. A., C.-Y. She, and **J. Oberheide**  
*Tidal Influence in the Determination of Long-term Trends in the Mesosphere-Lower Thermosphere from LIDAR Observations*  
J. Atmos. Sol. Terr. Phys., in press, doi:10.1016/j.jastp.2020.105323, 2020.
20. \*Kumari, K. and **J. Oberheide**  
*QBO, ENSO and Solar Cycle Effects in Short-term Nonmigrating Tidal Variability on Planetary Wave Timescales from SABER - An Information-Theoretic Approach*  
J. Geophys. Res. Atmos., 125, e2019JD031910, doi:10.1029/2019JD031910, 2020
21. **Oberheide, J.**, N. M. Pedatella, Q. Guan, \*K. Kumari, A. G. Burns, and R. W. Eastes  
*Thermospheric composition O/N<sub>2</sub> response to an altered meridional mean circulation during Sudden Stratospheric Warmings observed by GOLD*  
Geophys. Res. Lett., 47, e2019GL086313, doi:10.1029/2019GL086313, 2020
22. Lu, X., H. Wu, X. Chu, **J. Oberheide**, M. Mlynczak, and J. Russell III  
*Quasi-Biennial Oscillation of Short-Period Planetary Waves and Polar Night Jet in Winter Antarctica Observed in SABER and MERRA-2 and Mechanism Study with a Quasi-Geostrophic Model*  
Geophys. Res. Lett., 46, 13,526-13,534, doi:10.1029/2019GL084759, 2019.
23. Vitharana, A., X. Zhu, J. Du, **J. Oberheide**, and W. Ward  
*Statistical Modeling of Tidal Weather in the Mesosphere and lower Thermosphere*  
J. Geophys. Res. Atmos, 124, 9011-9027, doi:10.1029/2019JD030573, 2019.
24. \*Nischal, N., **J. Oberheide**, M. G. Mlynczak, D. R. Marsh, and Q. Gan\*\*  
*Solar cycle variability of nonmigrating tides in the 5.3  $\mu\text{m}$  and 15  $\mu\text{m}$  infrared cooling of the thermosphere (100-180 km) from SABER.*  
J. Geophys. Res. Space Physics, 124, 2338-2356, doi:10.1029/2018JA026356, 2019.
25. \*\*Gan, Q., **J. Oberheide**, and N. Pedatella  
*Sources, sinks and propagation characteristics of the quasi 6-day wave and its impact on the residual mean circulation*  
J. Geophys. Res. Atmos., 123, 9152-9170, doi:10.1029/2018JD028553, 2018.
26. Lu, X., H. Wu, **J. Oberheide**, H.-L. Liu, and J. McInerney  
*Latitudinal Double-Peak Structure of Stationary Planetary Wave 1 in the Austral*

- Winter Middle Atmosphere and its Possible Generation Mechanism*  
 J. Geophys. Res. Atmos., 123, 11,551-11,568, doi:10.1029/2018JD029172, 2018.
27. Eastes, R. W., W. E. McClintock, A. G. Burns, D. N. Anderson, L. Andersson, M. Codrescu, J. T. Correia, R. E. Daniell, S. L. England, J. S. Evans, J. Harvey, A. Krywonos, J. D. Lumpe, A. D. Richmond, D. W. Rusch, O. Siegmund, S. C. Solomon, D. J. Strickland, T. N. Woods, A. Aksnes, S. A. Budzien, K. F. Dymond, F. G. Eparvier, C. R. Martinis, and **J. Oberheide**  
*The Global-Scale Observations of the Limb and Disk (GOLD) Mission*  
 Space Sci. Rev., doi:10.1007/s11214-017-0392-2, 2017
28. \*Nischal, N., **J. Oberheide**, M. G. Mlynczak, L. A. Hunt, and A. Maute  
*Nonmigrating tidal impact on the CO<sub>2</sub> 15 μm infrared cooling of the lower thermosphere during solar minimum conditions*  
 J. Geophys. Res. Space Physics, 122, 6761-6775, doi:10.1002/2017JA024273, 2017
29. \*\*Gan, Q., **J. Oberheide**, J. Yue, and W. Wang  
*Short-term variability in the ionosphere due to the nonlinear interaction between the 6-day wave and migrating tides*  
 J. Geophys. Res. Space Physics, 122, 8831-8846, doi:10.1002/2017JA023947, 2017
30. Pedatella, N. M., **J. Oberheide**, E. K. Sutton, H.-L. Liu, J. L. Anderson, and K. Reader  
*Short-term nonmigrating tide variability in the mesosphere, thermosphere, and ionosphere*  
 J. Geophys. Res. Space Physics, 121, 3621-3633, doi:10.1002/2016JA022528, 2016.
31. She, C.-Y., D. A. Krueger, T. Yuan, and **J. Oberheide**  
*On the polarization relations of diurnal and semidiurnal tides in the mesopause region*  
 J. Atmos. Sol. Terr. Phys., 142, 60-71, doi:10.1016/j.jastp.2016.02.024, 2016.
32. Lieberman, R. S., D. M. Riggan, D. A. Ortland, **J. Oberheide**, and D. E. Siskind  
*Global observations of nonmigrating diurnal tides generated by tide-planetary wave interactions*  
 J. Geophys. Res. Atmos., 120, 11,419-11,437, doi:10.1002/2015JD023739, 2015.
33. **Oberheide, J.**, K. Shiokawa, S. Gurubaran, W. E. Ward, H. Fujiwara, M. J. Kosch, J. J. Makela, and H. Takahashi  
*The geospace response to variable inputs from the lower atmosphere: A review of the progress made by Task Group 4 of CAWSES-II*  
 Progress in Earth and Planetary Science, 2:2, doi:10.1186/s40645-014-0031-4, 2015.
34. Yuan, T., J. Wang, X. Cai, J. Sojka, D. Rice, **J. Oberheide**, and N. Criddle  
*Investigation of dynamic scheme behind the seasonal and local time variations of high altitude sporadic Na layer (Nas) and descending E layer (Es) in the Mid-latitude lower E region.*  
 J. Geophys. Res. Space Physics, 119, 5985-5999, doi:10.1002/2014JA019942, 2014.
35. \*Warner, K., and **J. Oberheide**  
*Nonmigrating Tidal Heating and MLT Tidal Wind Variability due to the El Niño-Southern Oscillation*

- J. Geophys. Res. Atmos., 119, 1249-1265, doi:10.1002/2013JD020407, 2014.
36. Yuan, T., C. Y. She, **J. Oberheide**, and D. Krueger  
*Vertical tidal wind climatology from full diurnal cycle Na density lidar observations at Ft. Collins, CO (41°N, 105°W)*  
 J. Geophys. Res. Atmos., 119, 4600-4615, doi:10.1002/2013JD020338, 2014.
37. Kishore Kumar, G., W. Singer, **J. Oberheide**, N. Grieger, P. P. Batista, D. M. Riggan, H. Schmidt, and B. R. Clemesha  
*Diurnal tides at low latitudes: Radar, satellite, and model results*  
 J. Atmos. Sol. Terr. Phys., 118, 96-105, doi:10.1016/j.jastp.2013.07.005, 2014.
38. Lieberman, R. S., **J. Oberheide**, and E. Talaat  
*Nonmigrating diurnal tides observed in global thermospheric winds*  
 J. Geophys. Res. Space Physics, 118, 7384-7397, doi:10.1002/2013JA018975, 2013.
39. **Oberheide, J.**, M. G. Mlynczak, C. \*Mosso, B. \*Schroeder, B. Funke, and A. Maute  
*Impact of tropospheric tides on the nitric oxide 5.3 μm infrared cooling of the low-latitude thermosphere during solar minimum conditions*  
 J. Geophys. Res. Space Physics, 118, 7283-7293, doi:10.1002/2013JA019278, 2013.
40. Forbes, J.M., X. Zhang, S. Bruinsma, and **J. Oberheide**  
*Lunar Semidiurnal Tide in the Thermosphere under Solar Minimum Conditions*  
 J. Geophys. Res. Space Physics, 118, 1788-1801, doi:10.1029/2012JA017962, 2013.
41. Lieberman, R. S., **J. Oberheide**, L. Gordley, and B. T. Marshall  
*Recovery of planetary-scale waves in stratospheric, mesospheric and lower thermospheric winds and temperatures from Doppler Wind and Temperature Sounder*  
 J. Appl. Remote Sens. 6(1), 063570, doi:10.1117/1.JRS.6.063570, 2012.
42. Chang, L. C., W. E. Ward, S. E. Palo, J. Du, D. Y. Wang, H.-L. Liu, M. E. Hagan, Y. Portnyagin, **J. Oberheide**, L. P. Goncharenko, T. Nakamura, P. Hoffmann, W. Singer, P. P. Batista, B. Clemesha, A. H. Manson, D. M. Riggan, C.-Y. She, T. Tsuda, and T. Yuan  
*Comparison of Diurnal Tide in Models and Ground-Based Observations during the 2005 CAWSES Tidal Campaign*  
 J. Atmos. Sol. Terr. Phys., 78-79, 19-30, doi:10.1016/j.jastp.2010.12.0104, 2012.
43. Forbes, J. M., X. Zhang, S. L. Bruinsma, and **J. Oberheide**  
*Sun-Synchronous Thermal Tides in Exosphere Temperature from CHAMP and GRACE Accelerometer Measurements*  
 J. Geophys. Res., 116, A11309, doi:10.1029/2011JA016855, 2011.
44. **Oberheide, J.**, J. M. Forbes, X. Zhang, and S. L. Bruinsma  
*Climatology of upward propagating tides in the thermosphere*  
 J. Geophys. Res., 116, A11306, doi:10.1029/2011JA016784, 2011.
45. Lu, X., A. Liu, **J. Oberheide**, Q. Wu, T. Li, Z. Li, G. Swenson, and S. Franke  
*Seasonal Variability of the Diurnal Tide in the Mesosphere and Lower Thermosphere over Maui, HI (20.7°N, 156.3°W)*  
 J. Geophys. Res., 116, D17103, doi:10.1029/2011JD015599, 2011.



46. Offermann, D., P. Hoffmann, P. Knieling, R. Koppmann, **J. Oberheide**, D. M. Riggin, V. M. Turnbridge, and W. Steinbrecht  
*Quasi 2 Day Waves in the summer mesosphere: Triple structure of amplitudes and long-term development*  
J. Geophys. Res., 116, D00P02, doi:10.1029/2010JD015051, 2011.
47. **Oberheide, J.**, J. M. Forbes, X. Zhang, and S. L. Bruinsma  
*Wave-driven variability in the ionosphere-thermosphere-mesosphere system: What contributes to the “wave-4”?*  
J. Geophys. Res., 116, A01306, doi:10.1029/2010JA015911, 2011.
48. Liu, H.-L., B. T. Foster, M. E. Hagan, J. M. McInerney, A. Maute, L. Qian, A. D. Richmond, R. G. Roble, S. C. Solomon, R. R. Garcia, D. Kinnison, D. R. Marsh, A. K. Smith, J. Richter, F. Sassi, and **J. Oberheide**  
*Thermosphere Extension of the Whole Atmosphere Community Climate Model*  
J. Geophys. Res., 115, A12301, doi:10.1029/2010JA015586, 2010.
49. Offermann, D., P. Hoffmann, P. Knieling, R. Koppmann, **J. Oberheide**, and W. Steinbrecht  
*Long-Term Trends and Solar Cycle Variations of Mesospheric Temperature and Dynamics*  
J. Geophys. Res., 115, D18127, doi:10.1029/2009JD013363, 2010.
50. Lübken, F.-J., J. Austin, U. Langematz, and **J. Oberheide**  
*Introduction to the Climate and Weather of the Sun Earth System special section*  
J. Geophys. Res., 115, D00I19, doi:10.1029/2009JD013784, 2010.

### **Prior to Clemson**

1. Ward, W. E., **J. Oberheide**, L. Goncharenko, T. Nakamura, P. Hoffmann, W. Singer, L. C. Chang, J. Du, D.-Y. Wang, B. Clemesha, C. Meek, D. M. Riggin, C.-Y. She, and T. Yuan  
*On the consistency of model, ground-based and satellite observations of tidal signatures: Initial results from the CAWSES tidal campaigns*  
J. Geophys. Res., 115, D07107, doi:10.1029/2009JD012593, 2010.
2. **Oberheide, J.**, J. M. Forbes, K. Häusler, Q. Wu, and S. L. Bruinsma  
*Tropospheric tides from 80-400 km: propagation, inter-annual variability and solar cycle effects*  
J. Geophys. Res., 114, D00I05, doi:10.1029/2009JD012388, 2009.
3. Forbes, J. M., S. L. Bruinsma, X. Zhang, and **J. Oberheide**  
*Surface-exosphere coupling due to thermal tides*  
Geophys. Res. Lett., 36, L15812, doi:10.1029/2009GL038748, 2009.
4. Preusse, P., S. D. Eckermann, M. Ern, **J. Oberheide**, R. H. Picard, R. G. Roble, M. Riese, J. M. Russell III, and M. G. Mlynczak  
*Global ray tracing simulations of the SABER gravity wave climatology*  
J. Geophys. Res., 114, D08126, doi:10.1029/2008JD011214, 2009.
5. Offermann, D., O. Gusev, M. Donner, J. M. Forbes, M. Hagan, M. G. Mlynczak, **J. Oberheide**, P. Preusse, H. Schmidt, and J. M. Russell III

*Relative intensities of middle atmosphere waves*

J. Geophys. Res., 114, D06110, doi:10.1029/2008JD010662, 2009.

6. **Oberheide, J.**, and J. M. Forbes  
*Thermospheric nitric oxide variability induced by nonmigrating tides*  
Geophys. Res. Lett., 35, L16814, doi: 10.1029/2008GL034825, 2008b.
7. Pedatella, N. M., J. M. Forbes, and **J. Oberheide**  
*Intra-annual variability of the low-latitude ionosphere due to nonmigrating tides*  
Geophys. Res. Lett., 35, L18104, doi: 10.1029/2008GL035332, 2008.
8. **Oberheide, J.**, and J. M. Forbes  
*Tidal propagation of deep tropical cloud signatures into the thermosphere from TIMED observations*  
Geophys. Res. Lett., 35, L04816, doi: 10.1029/2007GL032397, 2008a.
9. Du, J., W. E. Ward, **J. Oberheide**, T. Nakamura, and T. Tsuda  
*Semidiurnal tides from the Extended Canadian Middle Atmosphere Model (CMAM) and comparisons with TIMED Doppler Interferometer (TIDI) and radar observations*  
J. Atmos. Sol. Terr. Phys., 69(17-18), 2159, doi: 10.1016/j.jastp.2007.07.014, 2007.
10. Liu, H.-L., T. Li, C.-Y. She, **J. Oberheide**, Q. Wu, M. E. Hagan, J. Xu, R. G. Roble, M. G. Mlynczak, and J. M. Russell III  
*Comparative study of short-term diurnal tidal variability*  
J. Geophys. Res., 112, D18108, doi: 10.1029/2007JD008542, 2007.
11. **Oberheide, J.**, Q. Wu, T. L. Killeen, M. E. Hagan, and R. G. Roble  
*A climatology of nonmigrating semidiurnal tides from TIMED Doppler Interferometer (TIDI) wind data*  
J. Atmos. Sol. Terr. Phys., 69(17-18), 2203, doi: 10.1016/j.jastp.2007.05.010, 2007.
12. Offermann, D., M. Jarisch, H. Schmidt, **J. Oberheide**, K. U. Grossmann, O. Gusev, J. M. Russell III, and M. G. Mlynczak  
*The "wave turbopause"*  
J. Atmos. Sol. Terr. Phys., 69(17-18), 2139, doi: 10.1016/j.jastp.2007.05.012, 2007.
13. Stober G., Ch. Jacobi, K. Froehlich, and **J. Oberheide**  
*Meteor radar temperatures over Collm (51.3°N, 13°E)*  
Adv. Space Res., 42(7), 1253-1258, doi: 10.1016/j.asr.2007.10.018, 2007.
14. **Oberheide, J.**  
*CRISTA 1 & 2 results in the mesosphere and lower thermosphere: Editorial*  
J. Atmos. Sol. Terr. Phys., 68(15), 1683, doi: 10.1016/j.jastp.2006.06.002, 2006.
15. **Oberheide, J.**, H.-L. Liu, O. A. Gusev, and D. Offermann  
*Mesospheric surf zone and temperature inversion layers in early November 1994*  
J. Atmos. Sol. Terr. Phys., 68(15), 1751-1763, doi: 10.1016/j.jastp.2005.11.013, 2006.
16. Offermann, D., M. Jarisch, **J. Oberheide**, O. Gusev, I. Wohltmann, J. M. Russell III, and M. G. Mlynczak  
*Global wave activity from upper stratosphere to lower thermosphere: A new turbopause concept*

- J. Atmos. Sol. Terr. Phys., 68(15), 1709-1729, doi: 10.1016/j.jastp.2006.01.013, 2006.
17. **Oberheide, J.**, Q. Wu, T. L. Killeen, M. E. Hagan, and R. G. Roble  
*Diurnal nonmigrating tides from TIMED Doppler Interferometer wind data: Monthly climatologies and seasonal variations*  
J. Geophys. Res., 111, A10S03, doi: 10.1029/2005JA011491, 2006.
  18. **Oberheide, J.**, D. Offermann, J. M. Russell III, and M. G. Mlynczak  
*Intercomparison of kinetic temperature from 15  $\mu\text{m}$  CO<sub>2</sub> limb emissions and OH\*(3,1) rotational temperature in nearly coincident air masses: SABER, GRIPS*  
Geophys. Res. Lett., 33, L14811, doi: 10.1029/2006GL026439, 2006.
  19. Offermann, D., **J. Oberheide**, M. Jarisch, K. U. Grossmann, and O. Gusev  
*Similarities in middle atmosphere structures*  
Meteor. Zeitsch., 15(3), 333-342, doi: 10.1127/0941-2948/2006/0135, 2006.
  20. Offermann, D., M. Jarisch, M. Donner, **J. Oberheide**, I. Wohltmann, R. Garcia, D. Marsh, B. Naujokat, and P. Winkler  
*Middle atmosphere summer duration as an indicator of long-term circulation changes*  
Adv. Space Res., 35, 1416-1422, doi: 10.1016/j.asr.2005.02.065, 2005.
  21. **Oberheide, J.**, Q. Wu, D. A. Ortland, T. L. Killeen, M. E. Hagan, R. G. Roble, R. J. Niciejewski, and W. R. Skinner  
*Nonmigrating diurnal tides as measured by the TIMED Doppler Interferometer: Preliminary results*  
Adv. Space Res., 35, 1911-1917, doi: 10.1016/j.asr.2005.01.063, 2005.
  22. Lieberman, R. S., **J. Oberheide**, M. E. Hagan, E. E. Remsberg, and L. L. Gordley  
*Variability of diurnal tides and planetary waves during November 1978 - May 1979*  
J. Atmos. Sol. Terr. Phys., 66, 517-528, doi: 10.1016/j.jastp.2004.01.006, 2004.
  23. **Oberheide J.**, M. E. Hagan, R. G. Roble, and O. A. Gusev  
*A global view of tidal temperature perturbations above the mesopause: Preliminary model/observation intercomparison*  
Adv. Space Res., 32(5), 857-862, doi: 10.1016/S0273-1177(03)00404-6, 2003.
  24. Offermann, D., M. Donner, K. U. Grossmann, O. Gusev, M. Jarisch, M. Kaufmann, **J. Oberheide**, and A. I. Semenov  
*Zonal asymmetries in middle atmosphere temperatures*  
Adv. Space Res., 32(9), 1771-1780, doi: 10.1016/S0273-1177(03)90475-3, 2003.
  25. Ern, M., D. Offermann, P. Preusse, K.-U. Grossmann, and **J. Oberheide**  
*Calibration procedures and correction of detector signal relaxations for the CRISTA infrared satellite instrument*  
Appl. Opt., 42(9), 1594-1609, 2003.
  26. **Oberheide, J.**, M. E. Hagan, and R. G. Roble  
*Tidal signatures and aliasing in temperature data from slowly precessing satellites*  
J. Geophys. Res., 108(A2), 1055, doi: 10.1029/2002JA009585, 2003.
  27. **Oberheide, J.**, M. E. Hagan, and R. G. Roble

- Correction to J. Geophys. Res.*, 108(A2), 1055, doi: 10.1029/2002JA009585, 2003.  
*J. Geophys. Res.*, 108(A5), 1213, doi: 10.1029/2003JA009967, 2003.
28. Wu, D. L., W. G. Read, Z. Shippony, T. Leblanc, T. J. Duck, D. A. Ortland, R. J. Sica, P. S. Argall, **J. Oberheide**, A. Hauchecorne, P. Keckhut, C. Y. She, and D. A. Krueger  
*Mesospheric temperature from UARS MLS: retrieval and validation*  
*J. Atmos. Sol. Terr. Phys.*, 65, 245-267, doi: 10.1016/S1364-6826(02)00293-6, 2003.
29. **Oberheide, J.** and O. A. Gusev  
*Observation of migrating and nonmigrating diurnal tides in the equatorial lower thermosphere*  
*Geophys. Res. Lett.*, 29(24), 2167, doi: 10.1029/2002GL016213, 2002.
30. **Oberheide, J.**, G. A. Lehmacher, D. Offermann, K. U. Grossmann, A. H. Manson, C. E. Meek, F. J. Schmidlin, W. Singer, P. Hoffmann, and R. A. Vincent  
*Geostrophic wind fields in the stratosphere and mesosphere from satellite data*  
*J. Geophys. Res.*, 107(D23), 8175, doi: 10.1029/2001JD000655, 2002.
31. Smith, A. K., P. Preusse, and **J. Oberheide**  
*Middle atmosphere Kelvin waves observed in Cryogenic Infrared Spectrometers and Telescopes for the Atmosphere (CRISTA) 1 and 2 temperature and trace species*  
*J. Geophys. Res.*, 107(D23), 8177, doi: 10.1029/2001JD000577, 2002.
32. Riese, M., G. L. Manney, **J. Oberheide**, X. Tie, and V. Kuell  
*Stratospheric transport by planetary wave mixing as observed during CRISTA-2*  
*J. Geophys. Res.*, 107(D23), 8179, doi: 10.1029/2001JD000629, 2002.
33. Hagan, M. E., R. G. Roble, C. Hartsough, **J. Oberheide**, and M. Jarisch  
*Dynamics of the middle atmosphere during CRISTA-2 as simulated by the NCAR thermosphere-ionosphere-mesosphere-electrodynamics general circulation model*  
*J. Geophys. Res.*, 107(D23), 8181, doi: 10.1029/2001JD000679, 2002.
34. Grossmann, K. U., D. Offermann, O. Gusev, **J. Oberheide**, M. Riese, and R. Spang  
*The CRISTA-2 mission*  
*J. Geophys. Res.*, 107(D23), 8173, doi: 10.1029/2001JD000667, 2002.
35. **Oberheide, J.**, M. E. Hagan, R. G. Roble, and D. Offermann  
*Sources of nonmigrating tides in the tropical middle atmosphere*  
*J. Geophys. Res.*, 107(D21), 4567, doi: 10.1029/2002JD002220, 2002.
36. Kostsov, V. S., Yu. M. Timofeyev, K. U. Grossmann, M. Kaufmann, and **J. Oberheide**  
*Interpretation of Satellite Measurements of the Outgoing Nonequilibrium IR Radiation in the CO<sub>2</sub> 15- $\mu$ m Band: 2. Processing the CRISTA Experimental Data*  
*Izvestiya, Atmos. Ocean. Phys.* (translated Russian Journal), 37, 739-747, 2001.
37. Manney, G. L., H. A. Michelsen, R. M. Bevilacqua, M. R. Gunson, F. W. Irion, N. J. Livesey, **J. Oberheide**, M. Riese, J. M. Russell III, G. C. Toon, and J. M. Zawodny  
*Comparison of satellite ozone observations in coincident air masses in early November 1994*  
*J. Geophys. Res.*, 106(D9), 9923-9944, doi: 10.1029/2000JD900826, 2001.

38. Preusse, P., S. D. Eckermann, **J. Oberheide**, M. E. Hagan, and D. Offermann  
*Modulation of gravity waves by tides as seen in CRISTA temperatures*  
Adv. Space Res., 27(10), 1773-1778, doi: 10.1016/S0273-1177(01)00336-2, 2001.
39. **Oberheide, J.**, M. E. Hagan, W. E. Ward, M. Riese, and D. Offermann  
*Modeling the diurnal tide for the Cryogenic Infrared Spectrometers and Telescopes for the Atmosphere (CRISTA) 1 time period*  
J. Geophys. Res., 105(A11), 24,917-24,929, doi: 10.1029/2000JA000047, 2000.
40. Lehmacher, G. A., **J. Oberheide**, F. J. Schmidlin, and D. Offermann  
*Zero miss time and zero miss distance experiments for validation of CRISTA-2 temperatures*  
Adv. Space Res., 26(6), 965-969, doi: 10.1016/S0273-1177(00)00038-7, 2000.
41. Ward, W. E., **J. Oberheide**, M. Riese, P. Preusse, and D. Offermann  
*Tidal signatures in temperature data from CRISTA-1 mission*  
J. Geophys. Res., 104(D13), 16,391-16,403, doi: 10.1029/1998JD100109, 1999.
42. Preusse, P., M. Riese, **J. Oberheide**, M. Bittner, K. U. Grossmann, and D. Offermann  
*Evidence for a zonally trapped diurnal tide in CRISTA temperatures*  
Adv. Space Res., 19, 579-582, doi: 10.1016/S0273-1177(97)00176-2, 1997.
43. **Oberheide, J.**, P. Wilhelms, and M. Zimmer  
*New results on the absolute ion detection efficiencies of a microchannel plate*  
Meas. Sci. Technol., 8, 351-354, doi: 10.1088/0957-0233/8/4/001, 1997.

### **Conference Proceedings (Reviewed)**

#### **Prior to Clemson**

1. Grossmann, K. U., O. Gusev, **J. Oberheide**, and P. Knieling  
*New Results from CRISTA*  
Proc. SPIE, Vol. 5571, 152-162, doi:10.1117/12.563902, 2004.
2. Eckermann, S. D., P. Preusse, B. Schaeler, **J. Oberheide**, D. Offermann, J. T. Bacmeister, and D. Broutman  
*Global Gravity Wave Weather in the Middle Atmosphere: Preliminary Insights from the CRISTA-SPAS Missions*  
Anare Reports, 146, 11-24, Eds. Morris and Wilkinson, 2001.
3. Offermann, D., M. Jarisch, B. Schaeler, G. Eidmann, M. Langfermann, **J. Oberheide**, T. Wiemert, M. Riese, and C. Schiller  
*Trace Gas Densities and Dynamics at and above the Tropopause as Derived from CRISTA Data*  
Proc. SPIE, Vol. 4150, 10-19, 2001.
4. Riese, M., G. L. Manney, and **J. Oberheide**  
*Horizontal Spurengastransport in der Stratosphäre w. der CRISTA-2 Mission*  
DACH Proceedings, Vienna, Austria, 2001.
5. Riese, M., R. Spang, **J. Oberheide**, G. A. Lehmacher, P. Preusse, and D. Offermann  
*Some results of the CRISTA experiment*

Proceedings 14<sup>th</sup> ESA Symposium on European Rocket and Balloon Programmes and Related Research, Potsdam, Germany, ESA SP-437, 1999.

### **Conference Proceedings (Unreviewed)**

1. Forbes, J. M., S. Bruinsma, X. Zhang, N. Pedatella, and **J. Oberheide**  
*Thermospheric Tides as Viewed from Space: CHAMP and Grace as a “Mini-Constellation”*  
SWARM Conference Proceedings, Potsdam, Germany, 2010.

### **Other Scholarly Publications**

1. *Committee on a Decadal Strategy for Solar and Space Physics*  
National Research Council, Washington DC, 440 pages, 2013.
2. Blake, J. B., J. Burkepile, J. M. Davis, C. DeForest, J. F. Drake, W. C. Feldman, T. Llewellyn, **J. Oberheide**, T. G. Onsager, A. J. Tylka, and G. P. Zank  
*Senior Review 2008 of the Mission Operations and Data Analysis Program for the Heliophysics Operating Missions*  
NASA Science Mission Directorate, 43 pages, 2008.
3. **Oberheide, J.**  
*On large-scale wave coupling across the stratopause*  
Professorial Dissertation (Habilitationsschrift), Deutsche Nationalbibliothek, urn:nbn:de:hbz:468-20070724, 2007.
4. **Oberheide, J.**  
*Messung und Modellierung von Gezeitenwellen in der mittleren Erdatmosphäre: Ergebnisse des CRISTA-Experiments*  
Dissertation, WUB-DIS2000-10, Fachbereich 8, Bergische Universität – Gesamthochschule Wuppertal, 2000.
5. **Oberheide, J.**  
*Messung des Nachweisvermögens von Mikrokanalplatten für Edelgasionen*  
Diplomarbeit, Institut für Atom- und Molekülphysik, Universität Hannover, 1996.
4. **Oberheide, J.**  
*Gezeitenwellen in der Atmosphäre,*  
Berg. Blätter, 22/2, 1999.

## **PRESENTATIONS**

### **Invited Conference Talks (First and Presenting Author)**

1. *Whole Atmosphere Interconnections Between Terrestrial & Space Weather*  
AMS Annual Meeting, Baltimore, MD, January 2024.
2. *IT response to SSW as observed by GOLD, ICON, and COSMIC-2*  
NSF CEDAR Conference, Austin, TX, June 2022.
3. *Ionospheric tidal weather from COSMIC-2*  
NSF CEDAR Conference, Austin, TX, June 2022.

4. *Atmospheric-Ionosphere Coupling: Where do we stand and where are we heading?*  
15<sup>th</sup> Quadrennial Symposium on Solar-Terrestrial Physics, Mumbai, India, Feb 2022.
5. *What would it take to understand the tidal weather of the ITM?*  
Heliophysics 2050, Online, Washington, DC, United States, May 2021.
6. *Thermospheric composition response to Sudden Stratospheric Warmings observed by the Global-Scale Observations of the Limb and Disk (GOLD) instrument*  
EGU Meeting, Vienna, Austria, May 2020.
7. *Atmospheric Tides - Key to Understanding the Meteorological Driving of Geospace*  
IUGG General Assembly 2019, Montreal, Canada, July 2019.
8. *DYNAMIC - Overview of the Decadal Survey High Priority Notional Mission*  
NSF CEDAR Conference, Santa Fe, NM, June 2019.
9. *Short-term tidal variability in the ionospheric dynamo region over one solar cycle*  
ISWA Symposium, Tokyo, Japan, September 2016.
10. *Climatological Tidal Model of the Thermosphere – CTMT*  
NSF CEDAR Conference, Santa Fe, NM, June 2016.
11. *Short-term tidal variability in the mesosphere/lower thermosphere from SABER*  
IUGG General Assembly, Prague, Czech Republic, June 2015.
12. *Impact of nonmigrating tides on the thermospheric energy budget*  
5<sup>th</sup> IAGA/ICMA/CAWSES-II TG4 Workshop, Antalya, Turkey, August 2014.
13. *Response of upward propagating tides to varying solar activity levels*  
AGU Fall Meeting, San Francisco, USA, December 2013.
14. *Panel 2: Variability of the Sun-Earth System: Introduction and observational perspective of wave coupling from below*  
CAWSES-II Symposium, Nagoya, Japan, November 2013.
15. *What is the geospace response to variable inputs from the lower atmosphere? A summary of Task Group 4*  
CAWSES-II Symposium, Nagoya, Japan, November 2013.
16. *Tidal variability due to ENSO*  
COSPAR Scientific Assembly, Mysore, India, July 2012.
17. *Climatology of the tides*  
NSF CEDAR Conference, Santa Fe, NM, June 2012.
18. *On planetary wave coupling into the upper atmosphere*  
SCOSTEP/STP-12 Symposium, Berlin, Germany, July 2010.
19. *Tidal fields from 80-400 km: Results from a physics-based empirical fit model to TIMED observations*  
COSPAR Scientific Assembly, Bremen, German, July 2010.
20. *Tropospheric tides from 80-400 km*  
IAGA Meeting, Sopron, Hungary, August 2009.

21. *Inter-annual variability of nonmigrating tides forced by tropical convection*  
AGU Joint Assembly, Toronto, Canada, May 2009.
22. *The diurnal tide from the ground and from space during the CAWSES tidal campaigns*  
COSPAR Scientific Assembly, Montreal, Canada, July 2008.
23. *Morphology and forcing of nonmigrating tides in the middle atmosphere: What did we learn from TIMED?*  
IUGG General Assembly, Perugia, Italy, July 2007.
24. *Nonmigrating Tides: Forcing Mechanisms and Climatology*  
3<sup>rd</sup> IAGA/ICMA Workshop, Varna, Bulgaria, September 2006.
25. *The mesospheric surf zone as observed by CRISTA and modeled by TIME-GCM*  
European Geosciences Union, General Assembly, Vienna, Austria, April 2005.
26. *Atmospheric coupling by nonmigrating tides as derived from TIDI measurements*  
COSPAR Scientific Assembly, Paris, France, July 2004.

**Invited Colloquia (First and Presenting Author)**

1. *The tidal weather of Earth's middle and upper atmosphere*  
National Center for Atmospheric Research/HAO, Boulder, CO, October 2019.
2. *Satellite measurements of atmosphere/ionosphere coupling: challenges and new approaches*  
University of Rostock, Rostock, Germany, May 2019.
3. *On terrestrial weather, atmospheric tides and the energy budget of the thermosphere*  
College of Charleston, Charleston SC, USA, September 2017.
4. *On terrestrial weather, atmospheric tides and the energy budget of the thermosphere*  
Utah State University, Logan UT, USA, March 2017.
5. *Atmosphere-Ionosphere-Magnetosphere Interactions*  
Free University Berlin, Germany, November 2014.
6. *The weather – space weather connection*  
University of Louisville, Louisville, KY, USA, February 2014.
7. *Response of the ionosphere-thermosphere system to variable forcing: Science challenges*  
GFZ Potsdam, Potsdam, Germany, April 2012.
8. *Meteorological Impacts on Space Weather*  
Francis Marion University, Florence SC, USA, April 2011.
9. *Climate and Weather of the Sun-Earth System – CAWSES*  
Clemson University, Clemson SC, USA, September 2010.
10. *Meteorological Impacts on Space Weather*  
AMS Upstate Chapter, Greenville SC, USA, May 2010.
11. *Wave-Driven Meteorological Impacts on Space Weather*  
University of Frankfurt, Frankfurt, Germany, December 2009.



12. *Troposphere – Exosphere Coupling by Tides: A Satellite Perspective*  
IAP Kühlungsborn, Kühlungsborn, Germany, November 2009.
13. *Atmospheric tides – linking the troposphere with geospace*  
University of Bremen, Bremen, Germany, May 2009.
14. *Nonmigrating tides and their aeronomic implications: the “wave-4” puzzle*  
Kyoto University, Kyoto, Japan, December 2008.
15. *Tropische Gewitter und erdnahe Weltraum: Eine neue Sicht der Aeronomie*  
University of Wuppertal, Wuppertal, Germany, November 2008.
16. *The “wave-4” puzzle: a new view of troposphere-ionosphere coupling and its aeronomic implications*  
Clemson University, Clemson SC, USA, October 2008.
17. *Initial results from the CAWSES tidal campaigns: Satellite - ground-based intercomparisons*  
National Center for Atmospheric Research, Boulder CO, USA, February 2008.
18. *Atmospheric Tides*  
GFZ Potsdam, Potsdam, Germany, May 2007.
19. *Tides in the middle atmosphere: challenges and recent results*  
University of Bern, Bern, Switzerland, December 2006.
20. *Red Sprites and Blue Jets – Inaugural Lecture*  
University of Wuppertal, Wuppertal, Germany, June 2007.
21. *Von der Troposphäre zur Thermosphäre: Atmosphärenkopplung durch Gezeitenwellen*  
Research Center Jülich, Jülich, Germany, December 2005.
22. *Diurnal nonmigrating tides from TIDI wind data: Monthly climatol. and seasonal variations*  
given at: University of Toronto, York University, University of New Brunswick, Toronto & Fredericton, Canada, September - October 2005.
23. *Nonmigrating tides in the MLT region from satellite and model data*  
Leibniz-Institute for Atmospheric Physics, Kühlungsborn, Germany, May 2005.
24. *Dynamik der MLT-Region aus Experiment und Modell*  
Research Center Jülich, Jülich, Germany, June 2004.
25. *Leben mit einem Stern*  
Public Evening Lecture, Wuppertal, Germany, September 2003.
26. *The sources of nonmigrating tides in the tropical middle atmosphere*  
3<sup>rd</sup> Wuppertal Spring Time Seminar in Atmospheric Science, March 2002.
27. *Tidal and Planetary Waves in the Middle and Upper Atmosphere*  
National Center for Atmospheric Research, Boulder CO, USA, October 2001.
28. *The CRISTA Experiment*  
National Center for Atmospheric Research, Boulder CO, USA, June 1999.

### **Contributed Conference Presentations (First and Presenting Author)**

1. 90+ oral and 30+ poster presentations at international conferences (AGU, EGU, COSPAR, IAGA, AMS, etc.); co-author of 200+ oral presentations

### **HONORS AND AWARDS**

Most Accessed Paper Award, Japanese Geophysical Union (2017).

TIMED Group Achievement Award, NASA (2008).

Ph.D. Thesis Award, Commerzbank-Foundation (2001).

Postdoctoral Fellowship, National Center for Atmospheric Research, Boulder CO (2001).

Kepler Award for Excellence in Orbital Mechanics, Naval Research Laboratory,

Washington DC (1997).

### **SPONSORED RESEARCH, (OBERHEIDE'S SHARE)**

#### **Clemson (\$5.2m)**

1. *FDSS: Track 1: Integrate Research and Education in Magnetosphere – Ionosphere – Atmosphere Coupling*  
NSF, PI, \$1,488,646 (\$1,488,646), (2024-2029)
2. *Exploring Day-to-Day Variability of the Ionosphere-Thermosphere Driven by Planetary Wave-Tide Interactions*  
NASA, co-I, \$524,835 (\$120,534), (2024-2027)
3. *Exploring the response of the ionosphere/thermosphere to the Madden-Julian Oscillation*  
NASA, PI, \$1,098,257 (\$1,098,257), (2022-2026).
4. *Collaborative Research: ANSWERS: Impacts of Atmospheric Waves and Geomagnetic Disturbances on Quiet-time and Storm-time Space Weather*  
NSF, co-I, \$899,998 (\$88,937), (2022-2025).
5. *Role of lower atmosphere waves in preconditioning the ionosphere-thermosphere response to geomagnetic storms using ICON and GOLD*  
NASA, co-I, \$455,334 (\$61,005), (2021-2024).
6. *Exploring the causes of water vapor variability in the mesosphere, derived residual mean circulation and implications for the composition of the thermosphere using SABER and GOLD*  
NASA, PI, \$748,844 (\$748,844), (2020-2023).
7. *Response of the Mesosphere/Lower Thermosphere/Ionosphere to Tidal Variability Caused by the Madden-Julian Oscillation*  
NASA, PI, \$524,239, (\$524,239), (2019-2022).
8. *Life-Cycle of the Quasi Two-Day Wave*  
NSF, co-I, \$159,907, (\$30,215), (2016-2019).
9. *Short-term Tidal Variability from the Troposphere to the Dynamo Region*  
NASA, co-I, \$392,305, (\$144,513), (2015-2019).

10. *Impact of Nonmigrating Tides on the Thermospheric Energy Budget and Constituents*  
NSF, PI, \$297,955, (\$297,955), (2013-2018).
11. *Analysis of short-term tidal perturbations*  
NASA, co-I, ~\$400,000, (\$126,056), (2012-2016).
12. *Collaborative Research: CEDAR - Observational and Numerical Studies of Tide Planetary Wave Coupling*  
NSF, co-PI, ~\$400,000, (\$151,274), (2012-2016).
13. *Geospace response to lower atmospheric wave variability due to the El Niño – Southern Oscillation*  
NASA, PI, \$350,145, (\$350,145), (2011-2016).

**Prior to Clemson (\$569,000)**

14. *Nonmigrating Tides: Variability and Aeronomic Implications – Phase III*  
German Science Foundation, PI, \$284,000, (\$284,000), (2009-2011).
15. *Seasonal and Interannual Variability of Nonmigrating Tides in the MLT – Phase II*  
German Science Foundation, PI, \$120,000, (\$120,000), (2008-2009).
16. *Seasonal and Interannual Variability of Nonmigrating Tides in the MLT*  
German Science Foundation, PI, \$165,000, (\$165,000), (2005-2008).

**OTHER SPONSORED ACTIVITY**

- Travel Grant, Nagoya University, Japan, ~\$1,500, (2013).  
 Travel Grant, Colorado Research Associates, ~\$3,000, (2010).  
 Travel Grant, University of Wuppertal, Germany, ~\$5,000, (2010).  
 Travel Grant, University of Kyoto, Japan, ~\$12,000, (2008).  
 Travel Grant, Colorado Research Associates, ~\$4,500, (2008).  
 Travel Grant, University of New Brunswick, Canada, ~\$6,000, (2005).  
 Travel Grant, National Center for Atmospheric Research, ~\$4,500, (2004).

**POSTDOC ADVISING**

- Zhang, J., (2023), now postdoc at Utah State University  
 Koushik, N., (2022), now staff scientist at Indian Space Agency  
 Gan, Q., (2016-2018), now research scientist at Lab. for Space Physics, Boulder CO

**GRADUATE STUDENT ADVISING**

**Doctoral Graduates**

- Baiju, S. (PhD), “tbd”, in progress, first year student, 2023-present  
 Aggarwal, D. (PhD), “MJO in IT system”, in progress, 2022-present  
 Mukta, N., (PhD), “Tidal sources in the thermosphere”, in progress, 2022-present  
 Kumari, K., (PhD), “Short-Term Variability of Atmospheric Tides in Earth's Mesosphere and Lower Thermosphere Region”, 05/2021  
 Nischal, N., (PhD), “Nonmigrating tidal impact on the energy budget of the lower thermosphere”, 08/2019

## **Masters Graduates**

Warner, K., (MS), “Tidal heating and MLT tidal wind variability due to the El Nino Southern Oscillation”, 8/2013

## **TEACHING**

### **Courses Taught (Beginning Fall 2003)**

PHYS 2450, Physics of Global Climate Change, F15, F19, F20  
PHYS 4650, Thermodynamics and Statistical Mechanics, S15, S16, S22, S23, S24  
PHYS 6650, Thermodynamics and Statistical Mechanics, S15, S16, S22, S23, S24  
PHYS 8750 Atmospheric Tides and Planetary Waves, F18  
PHYS 4200, Atmospheric Physics, F14, F23  
PHYS 6200, Atmospheric Physics, F14, F23  
PHYS 8150, Thermodynamics and Statistical Mechanics, S14, S17, S18  
PHYS 4990H, Creat. Inq.: Met. Impacts on the Energy Budget of the Thermosphere, S14  
PHYS 3000/8750, Introduction to Research (team-taught), F13, F14, F15, F16, F17, F18  
PHYS 8210, Classical Mechanics, F13, F16, F17  
PHYS 8250, Atmospheric Dynamics, F22  
PHYS 875, Atmospheric Measurement Techniques (team-taught), S13.  
PHYS 815, Thermodynamics and Statistical Mechanics, S13.  
PHYS 821, Classical Mechanics, F12.  
PHYS 322, Mechanics II, S12.  
PHYS H322, Mechanics II, S12.  
PHYS 321, Mechanics I, F11.  
PHYS H321, Mechanics I, F11.  
PHYS 621, Mechanics I, F11.  
PHYS 875, Introduction to Research, F11.  
PHYS 240, Physics of Weather, S11, S19, S20, S21.

In Germany at University of Wuppertal:

- Measuring Techniques in Atmospheric Physics (graduate level, 3-cr), S08, S09.
- Electrodynamics (undergraduate level, 3-cr), S08.
- Physics for High School Teachers Exercises (undergraduate level, 2-cr), S07.
- Electrodynamics Exercises (undergraduate level, 2-cr), S04, S05, S06
- Continuum Mechanics Exercises (undergraduate level, 2-cr), F03, F04, F05, F06

### **New Course Development**

Atmospheric Tides and Planetary Waves (graduate level, 3-credits, now PHYS 8280), at Clemson University, 2018

Measuring Techniques in Atmospheric Physics (graduate level, 3-credits), at University of Wuppertal, Germany, in 2008.

## **UNIVERSITY AND PUBLIC SERVICE**

### **Committees**

- Department: Chair, Dept Chair Search Committee (2024).  
Graduate Program Coordinator (2020-present).  
Chair, Student Welfare Committee (2018-2020).  
Chair, Graduate Admissions Committee (2018-2020).  
Chair, Honors and Awards Committee (2011-2017).  
Chair, Faculty Search Committee (2016).  
Member, Chair Evaluation Committee (2015).  
Member, Advisory Committee (2012-2015).  
Member, Graduate Admissions Committee (2011-2017).  
Member, Faculty Search Committee (2011-2012).  
Member, TPR Committee (2015- ).
- College: Chair, Honors and Awards Committee (2014-2018).  
Member, Dean's Advisory Committee (2019-2020).  
Member, Bylaws Committee (2018)  
Member, Associate Dean for Undergraduate Studies Search (2014).  
Member, Honors and Awards Committee (2011-2014).
- University: Faculty Senator (2017-2020).  
Member, Student Awards and Scholarship Committee (2017-2018).  
Member, Graduate Grievance (2014-2017, 2019-2020).  
Member, Graduate Academic Integrity (2011-2013, 2015-2017).  
Member, Graduate Council (2011-2016).

### **Other Service**

- Faculty Mentor: X. Lu (2016-2022), S. Kaeppler (2018-present)  
Senior Thesis Advisor: S. Gardner (2023), A. Long (2022), C. Krier (2016), C. Mosso (2013), R. Kingery (2013)

## **MISCELLANEOUS**

- Czech Academy of Sciences, external program evaluator, (2015), international.  
Scientific Committee on Solar-Terrestrial Physics (SCOSTEP), Group Leader "Satellite Dynamics", CAWSES Global Observing Campaigns on Tides, (2005-2013), international.  
ORAU (Oak Ridge Associated Universities) NASA Postdoctoral Program Reviewer, Member, (2013-2016), national.

***March 20, 2024.***