

College of Science

RESUME – Jens Oberheide

PERSONAL DATA

Professor
Department of Physics and Astronomy
Clemson University
Clemson, SC 29634-0978
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January 24, 1969
Springe, Lower Saxony, Germany

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-).
Member, European Geophysical Union, EGU, (1997-).
Member, Committee on Space Research, COSPAR, (2002-).
Member, Deutsche Physikalische Gesellschaft, DPG, (1996-).
Member, American Meteorological Society, SC Upstate Chapter, AMS, (2010-).

PROFESSIONAL ACTIVITIES

Science Strategy and Advisory

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-), 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-), 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, Heliophysics Guest Investigator Program & Geospace Program, (2004, 2006-2007, 2009, 2012, 2014, 2015), national.

NSF, Panelist, CEDAR program, (2015), national

NSF, Panelist, Graduate Research Fellowship Program, (2015), national.

NSF, Panelist, Aeronomy Program, (2012, 2013), national.

UCAR (University Collaboration for Atmospheric Research), Panelist, NASA Jack Eddy Postdoctoral Program, (2013-), 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 “SWARM satellite mission”, (2012), international.

Various agencies (NSF, NASA, DFG, etc.), Write-in Reviewer, (2010-), national, international.

Conference Session Organization

Committee on Space Research (COSPAR), Deputy Scientific Organizer, Session C2.2 “Wave Coupling Processes and Consequences in the Whole Atmosphere”, Istanbul, Turkey, (2016), 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-), national/international.

PUBLICATIONS

Books and Monographs - Chapters

1. **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.
2. 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.
3. 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: 66; Clemson: 23; *: student, **: postdoc)

ISI Web of Science: h-index=27, number of citations=1585

Google Scholar: h-index=28, number of citations=2065

ResearcherID: [C-6156-2011](https://orcid.org/0000-0001-9000-1000).

1. *Nischal, N., **J. Oberheide**, M. G. Mlynczak, L. A. Hunt, and A. Maute
*Nonmigrating tidal impact on the CO₂ 15 μm infrared cooling of the lower
thermosphere during solar minimum conditions*
J. Geophys. Res. Space Physics, in press, 2017JA024273, 2017

2. **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, submitted, 2017JA023947, 2017
3. 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.
4. 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.
5. Lieberman, R. S., D. M. Riggin, 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.
6. **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.
7. 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.
8. *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.
9. 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.
10. Kishore Kumar, G., W. Singer, **J. Oberheide**, N. Grieger, P. P. Batista, D. M. Riggin, 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.
11. 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.

12. **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.
13. 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.
14. 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.
15. 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.
16. 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.
17. **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.
18. 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.
19. Offermann, D., P. Hoffmann, P. Knieling, R. Koppmann, **J. Oberheide**, D. M. Riggan, 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.
20. **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.
21. 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.
22. 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.
23. 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. Riggan, 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 μm CO₂ 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 CO₂ 15- μ 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 14th 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. *Short-term tidal variability in the ionospheric dynamo region over one solar cycle*
ISWA Symposium, Tokyo, Japan, September 2016.
2. *Climatological Tidal Model of the Thermosphere – CTMT*
NSF CEDAR Conference, Santa Fe, NM, June 2016.
3. *Short-term tidal variability in the mesosphere/lower thermosphere from SABER*
IUGG General Assembly, Prague, Czech Republic, June 2015.
4. *Impact of nonmigrating tides on the thermospheric energy budget*
5th IAGA/ICMA/CAWSES-II TG4 Workshop, Antalya, Turkey, August 2014.
5. *Response of upward propagating tides to varying solar activity levels*
AGU Fall Meeting, San Francisco, USA, December 2013.
6. *Panel 2: Variability of the Sun-Earth System: Introduction and observational perspective of wave coupling from below*
CAWSES-II Symposium, Nagoya, Japan, November 2013.
7. *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.

8. *Tidal variability due to ENSO*
COSPAR Scientific Assembly, Mysore, India, July 2012.
9. *Climatology of the tides*
NSF CEDAR Conference, Santa Fe, NM, June 2012.
10. *On planetary wave coupling into the upper atmosphere*
SCOSTEP/STP-12 Symposium, Berlin, Germany, July 2010.
11. *Tidal fields from 80-400 km: Results from a physics-based empirical fit model to TIMED observations*
COSPAR Scientific Assembly, Bremen, German, July 2010.
12. *Tropospheric tides from 80-400 km*
IGA Meeting, Sopron, Hungary, August 2009.
13. *Inter-annual variability of nonmigrating tides forced by tropical convection*
AGU Joint Assembly, Toronto, Canada, May 2009.
14. *The diurnal tide from the ground and from space during the CAWSES tidal campaigns*
COSPAR Scientific Assembly, Montreal, Canada, July 2008.
15. *Morphology and forcing of nonmigrating tides in the middle atmosphere: What did we learn from TIMED?*
IUGG General Assembly, Perugia, Italy, July 2007.
16. *Nonmigrating Tides: Forcing Mechanisms and Climatology*
3rd IAGA/ICMA Workshop, Varna, Bulgaria, September 2006.
17. *The mesospheric surf zone as observed by CRISTA and modeled by TIME-GCM*
European Geosciences Union, General Assembly, Vienna, Austria, April 2005.
18. *Atmospheric coupling by nonmigrating tides as derived from TIDI measurements*
COSPAR Scientific Assembly, Paris, France, July 2004.

Invited Colloquia (First and Presenting Author)

1. *On terrestrial weather, atmospheric tides and the energy budget of the thermosphere*
Utah State University, Logan UT, USA, March 2017.
2. *Atmosphere-Ionosphere-Magnetosphere Interactions*
Free University Berlin, Germany, November 2014.
3. *The weather – space weather connection*
University of Louisville, Louisville, KY, USA, February 2014.
4. *Response of the ionosphere-thermosphere system to variable forcing: Science challenges*
GFZ Potsdam, Potsdam, Germany, April 2012.
5. *Meteorological Impacts on Space Weather*
Francis Marion University, Florence SC, USA, April 2011.

6. *Climate and Weather of the Sun-Earth System – CAWSES*
Clemson University, Clemson SC, USA, September 2010.
7. *Meteorological Impacts on Space Weather*
AMS Upstate Chapter, Greenville SC, USA, May 2010.
8. *Wave-Driven Meteorological Impacts on Space Weather*
University of Frankfurt, Frankfurt, Germany, December 2009.
9. *Troposphere – Exosphere Coupling by Tides: A Satellite Perspective*
IAP Kühlungsborn, Kühlungsborn, Germany, November 2009.
10. *Atmospheric tides – linking the troposphere with geospace*
University of Bremen, Bremen, Germany, May 2009.
11. *Nonmigrating tides and their aeronomic implications: the “wave-4” puzzle*
Kyoto University, Kyoto, Japan, December 2008.
12. *Tropische Gewitter und erdnahe Weltraum: Eine neue Sicht der Aeronomie*
University of Wuppertal, Wuppertal, Germany, November 2008.
13. *The “wave-4” puzzle: a new view of troposphere-ionosphere coupling and its aeronomic implications*
Clemson University, Clemson SC, USA, October 2008.
14. *Initial results from the CAWSES tidal campaigns: Satellite - ground-based intercomparisons*
National Center for Atmospheric Research, Boulder CO, USA, February 2008.
15. *Atmospheric Tides*
GFZ Potsdam, Potsdam, Germany, May 2007.
16. *Tides in the middle atmosphere: challenges and recent results*
University of Bern, Bern, Switzerland, December 2006.
17. *Red Sprites and Blue Jets – Inaugural Lecture*
University of Wuppertal, Wuppertal, Germany, June 2007.
18. *Von der Troposphäre zur Thermosphäre: Atmosphärenkopplung durch Gezeitenwellen*
Research Center Jülich, Jülich, Germany, December 2005.
19. *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.
20. *Nonmigrating tides in the MLT region from satellite and model data*
Leibniz-Institute for Atmospheric Physics, Kühlungsborn, Germany, May 2005.
21. *Dynamik der MLT-Region aus Experiment und Modell*
Research Center Jülich, Jülich, Germany, June 2004.
22. *Leben mit einem Stern*
Public Evening Lecture, Wuppertal, Germany, September 2003.

23. *The sources of nonmigrating tides in the tropical middle atmosphere*
3rd Wuppertal Spring Time Seminar in Atmospheric Science, March 2002.
24. *Tidal and Planetary Waves in the Middle and Upper Atmosphere*
National Center for Atmospheric Research, Boulder CO, USA, October 2001.
25. *The CRISTA Experiment*
National Center for Atmospheric Research, Boulder CO, USA, June 1999.

Contributed Conference Presentations (First and Presenting Author)

1. 60+ oral and 15+ poster presentations at international conferences (AGU, EGU, COSPAR, IAGA, etc.); co-author of 90+ oral presentations

HONORS AND AWARDS

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

1. *Life-Cycle of the Quasi Two-Day Wave*
NSF, co-I, (\$30,215), (2016-2019).
2. *Short-term Tidal Variability from the Troposphere to the Dynamo Region*
NASA, co-I, \$392,305, (\$144,513), (2015-2018).
3. *Impact of Nonmigrating Tides on the Thermospheric Energy Budget and Constituents*
NSF, PI, \$297,955, (\$297,955), (2013-2018).
4. *Analysis of short-term tidal perturbations*
NASA, co-I, ~\$400,000, (\$126,056), (2012-2016).
5. *Collaborative Research: CEDAR - Observational and Numerical Studies of Tide Planetary Wave Coupling*
NSF, co-PI, ~\$400,000, (\$151,274), (2012-2016).
6. *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

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

9. *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

- Gan, Q., (2016-)

GRADUATE STUDENT ADVISING

Doctoral Graduates

- Kiene, A. (PhD), “Sounding Rocket Measurements of Vertically-Sheared F-Region Neutral Winds at Sunset and Modeling of their Effect on Spread-F Development”, 8/2016 (Committee member).
Wood, J. D., (PhD), “Multidimensional Simulations of Non-Linear Cosmic Ray Production in Supernovae Remnant Evolution”, 05/2015 (Committee member).
McGahee, C., (PhD), “A Spectroscopic Study of Anomalous Stellar Populations in M67”, 7/2014, (Committee member).
Bryngelson, G., (PhD), “The power of thermonuclear supernovae after one year”, 8/2012, (Committee member).

Masters Graduates

- Warner, K., (MS), “Tidal heating and MLT tidal wind variability due to the El Nino Southern Oscillation”, 8/2013 (Committee chair).
Nooner, J., (MS), “GPS TEC”, 8/2013, (Committee member).
Sayson, N.L.B., (MS), “EBIT science”, 5/2012, (Committee member).
Need, E., (MS), tbd, 5/2016, (Committee member)
Figg, E., (MS), tbd, 8/2016, (Committee member)

Current Graduate Advising

- Nischal, N., (PhD), “Short-term tidal variability, tbd”, 05/2018 (Committee chair)
Kumari, K., (PhD), “Tides in the atmosphere (tbd)”, 05/2020 (Committee chair)
Wang, H., (PhD), “tbd”, 2018, (Committee member).
Hurd, L., (PhD), “Rocket turbulence, tbd”, 8/2017 (Committee member).
Mesquita, R. (PhD), “Airglow Observations, tbd”, 8/2019? (Committee member).

TEACHING

Courses Taught (Beginning Fall 2003)

PHYS 2450, Physics of Global Climate Change, F15
PHYS 4650, Thermodynamics and Statistical Mechanics, S15, S16
PHYS 6650, Thermodynamics and Statistical Mechanics, S15, S16
PHYS 4200, Atmospheric Physics, F14
PHYS 6200, Atmospheric Physics, F14
PHYS 8150, Thermodynamics and Statistical Mechanics, S14, S17
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
PHYS 8210, Classical Mechanics, F13, F16
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.

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

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

UNIVERSITY AND PUBLIC SERVICE

Committees

Department: Chair, Honors and Awards Committee (2011-).
Chair, Faculty Search Committee (2016).
Member, Chair Evaluation Committee (2015).
Member, Advisory Committee (2012-2015).
Member, Graduate Student Admissions (2011-).
Member, Faculty Search Committee (2011-2012).
Member, TPR Committee (2015-).

College: Chair, Honors and Awards Committee (2014-).
Member, Associate Dean for Undergraduate Studies Search (2014).
Member, Honors and Awards Committee (2011-2014).

University: Faculty Senator (2017-)
Member, Graduate Grievance (2014-)
Member, Graduate Academic Integrity (2011-2013, 2015-).
Member, Graduate Council (2011-).

Other Service

Faculty Advisor, 5 Clemson summer undergraduate students: C. Krier (2015,16), B. Schroeder & C. Mosso (2012); R. Kingery (2013). Honors senior thesis advisor: C. Mosso, R. Kingery (2013); C. Krier (2016)

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-), national.

June 2, 2017.