
QUELLENVERZEICHNIS

- Akmaev, R.A., and V.I. Fomichev, Cooling of the mesosphere and lower thermosphere due to doubling of CO₂, *Ann. Geophys.*, *16*, 1501-1512 (1998).
- Akmaev, R.A., Modeling the cooling due to CO₂ increases in the mesosphere and lower thermosphere, *Phys. Chem. Earth*, *27*, 521-528 (2002).
- Akmaev, R.A., V.I. Fomichev, and X. Zhu, Impact of middle-atmospheric composition changes on greenhouse cooling in the upper atmosphere, *J. Atmos. Solar-Terr. Phys.*, *68*, 1879-1889 (2006).
- Bakan, S., und E. Raschke, Der natürliche Treibhauseffekt, *Promet*, *28*, Heft 3/4, 85-94 (2002).
- Berger, U., Modeling of middle atmosphere dynamics with LIMA, *J. Atmos. Solar-Terr. Phys.*, *70*, 1170-1200 (2008).
- Berger, U., and F.-J. Lübken, Weather in mesospheric ice layers, *Geophys. Res. Lett.*, *33*, L04806, doi:10.1029/2005GL024841 (2006).
- Berger, U., and U. von Zahn, Icy particles in the summer mesopause region: Three-dimensional modeling of their environment and two-dimensional modeling of their transport, *J. Geophys. Res.*, *Vol. 107*, No. A11, 1366, doi: 10.1029/2001JA000316 (2002). Die zugehörigen farbigen Abbildungen wurden erst in *J. Geophys. Res.*, *Vol. 108*, No. A10, doi: 10.1029/2003JA010 05 2 (2003) abgedruckt.
- Bremer, J., and U. Berger, Mesospheric temperature trends derived from ground-based LF phase-height observations at mid-latitudes: Comparison with model simulations, *J. Atmos. Solar-Terr. Phys.*, *64*, 805-816 (2002).
- Bremer, J., and D. Peters, Influence of stratospheric ozone changes on long-term trends in the meso- and lower thermosphere, *J. Atmos. Solar-Terr. Phys.*, *70*, 1473-1481 (2008).
- Chipperfield, M.P., V.E. Fioletov et al., Global Ozone: Past and Present, 58 pp., Chapter 3 of WMO *Global Ozone Research and Monitoring Project-Report No. 50, Scientific Assessment of Ozone Depletion: 2006* (2007).
- CIRA 1972, *COSPAR International Reference Atmosphere 1972*, Akademie Verlag, Berlin (1972).
- Douglass, A., V. Fioletov et al., Stratospheric ozone and surface ultraviolet radiation, 76 pp., Chapter 2 of WMO *Global Ozone Research and Monitoring Project-Report No. 52, Scientific Assessment of Ozone Depletion: 2010* (2011).
- Emmert, J.T., J.M. Picone, J.L. Lean, and S.H. Knowles, Global change in the thermosphere: Compelling evidence of a secular decrease in density, *J. Geophys. Res.*, *109*, A02301 (2004).
- Emmert, J.T., J.M. Picone, and R.R. Meier, Thermospheric global average density trends, 1967-2007, derived from orbits of 5000 near-Earth objects, *Geophys. Res. Lett.*, *35*, L05101 (2008).
- Emmert, J.T., J.L. Lean, and J.M. Picone, Record-low thermospheric density during the 2008 solar minimum, *Geophys. Res. Lett.*, *37*, L12102 (2010).
- Fiedler, J., G. Baumgarten, and F.-J. Lübken, NLC observations during one solar cycle above ALOMAR, *J. Atmos. Solar-Terr. Phys.*, *71*, 424-433 (2009).
- Gadsden, M., and W. Schröder, *Noctilucent Clouds*, Physics and Chemistry in Space, Vol. 18, Planetology, Springer Verlag, 165 pp. (1989).
- Gadsden, M., and M.J. Taylor, Measurements of noctilucent cloud heights: a bench mark for changes in the mesosphere, *J. Atmos. Solar-Terr. Phys.*, *56*, 461-466 (1994).
- Hansen, G., M. Serwazi, and U. von Zahn, First detection of a noctilucent cloud by lidar, *Geophys. Res. Lett.*, *16*, 1445-1448 (1989).
- Heavens Above: <http://www.heavens-above.com>
- IPCC 2007: *Vierter Sachstandsbericht des Zwischenstaatlichen Ausschusses für Klimaänderung* (2007).

- Jesse, O., Untersuchungen über die sogenannten leuchtenden Wolken, *Sitzungsberichte der Königl. Akad. d. Wiss. zu Berlin 1890/II*, 1031 (1890).
- Jesse, O., Die Höhe der leuchtenden Nachtwolken, *Astron. Nachrichten*, 140, 161-168 (1896).
- Justus, C.G., and D.L. Johnson, The NASA/MSFC Global Reference Atmospheric Model-1999 version (GRAM-99), *NASA/TM 209630*, NASA, Washington, D.C. (1999).
- Keating, G.M., R.H. Tolson, and M.S. Bradford, Evidence of long term global decline in the Earth's thermospheric densities apparently related to anthropogenic effects, *Geophys. Res. Lett.*, 27, 1523-1526 (2000).
- Keckhut, P., et al., An evaluation of uncertainties in monitoring middle atmosphere temperatures with the ground-based lidar network in support of space observations, *J. Atmos. Solar-Terr. Phys.*, 73, 627-642 (2011).
- Kiehl, J.T., and K.E. Trenberth, Earth's annual global mean energy budget, *Bull. Am. Met. Soc.*, 78, 197-208 (1997).
- Lübken, F.-J., Nearly zero temperature trend in the polar summer mesosphere, *Geophys. Res. Lett.*, 27, 3603-3606 (2000).
- Lübken, F.-J., and U. Berger, Interhemispheric comparison of mesospheric ice layers from the LIMA model, *J. Atmos. Solar-Terr. Phys.*, 69, 2292-2308 (2007).
- Lübken, F.-J., G. Baumgarten, J. Fiedler, M. Gerding, J. Höffner und U. Berger, Seasonal and latitudinal variation of noctilucent cloud altitudes, *Geophys. Res. Lett.*, 35, L06801, doi:10.1029/2007GL032281 (2008).
- Markos, F.A., J.O. Wise, M.J. Kendra, N.J. Grossbard, and B.R. Bowman, Detection of a long-term decrease in thermospheric neutral density, *Geophys. Res. Lett.*, 32, L04103, doi:10.1029/2004GL021269 (2005).
- Neupert, W.M., The solar corona above active regions: a comparison of extreme ultraviolet line emission with radio emission, *Solar Physics*, 2, 294-315 (1967).
- NOAA/ESRL, ftp://ftp.cmdl.noaa.gov/ccg/co2/trends/co2_mm_mlo.txt (2011).
- Qian, L., R.G. Roble, S.C. Solomon, and T.J. Kane, Calculated and observed climate change in the thermosphere, and a prediction for solar cycle 24, *Geophys. Res. Lett.*, 33, L23705 (2006).
- Roble, R.G., Energetics of the mesosphere and thermosphere, in »The Upper Mesosphere and Lower Thermosphere: A Review of Experiment and Theory«, *Geophysical Monograph 87*, pp. 1-21, edited by R.M. Johnson and T.L. Killeen, American Geophysical Union (1995).
- Salby, M.L., *Fundamentals of Atmospheric Physics*, Academic Press, 627 S. (1996).
- Schubert, G., C. Covey, A. Del Genio, L.S. Elson, G. Keating, A. Seiff, R.E. Young, J. Apt, C.C. Counselman III, A.J. Kliore, S.S. Limaye, H.E. Revercomb, L.A. Sromovsky, V.E. Suomi, F. Taylor, R. Woo, and U. von Zahn, Structure and circulation of the Venus atmosphere, *J. Geophys. Res.*, 85, 8007-8025 (1980).
- She, C.-Y., D.A. Krueger, R. Akmaev, H. Schmidt, E. Talaat, and S. Yee, Long-term variability in mesopause region temperatures over Fort Collins, Colorado (41°N, 105°W) based on lidar observations from 1990 through 2007, *J. Atmos. Solar-Terr. Phys.*, 71, 1558-1564 (2009).
- Squarra, O., <http://3sky.de> (2004).
- Taubenheim, J., K. Berendorf, W. Krüger, and G. Entzian, Height dependence of long-term trends in the middle atmosphere, Vortrag auf der EGS XIX General Assembly, Session ST3, Grenoble, Frankreich (1994).
- Thayer, J., M. Rapp, A. Gerrard, E. Gudmundsson, and T. Kane, Gravity wave influences on Arctic mesospheric clouds as determined by the Sondrestrom, Greenland, Rayleigh lidar, *J. Geophys. Res.*, Vol. 108, No. D8, doi: 10.1029/2002JD002363 (2003).
- Thomas, G.E., Is the polar mesosphere the miner's canary of global change?, *Adv. Space Res.*, Vol. 18, No. 3, 149-158 (1996).
- USSA 1976, *U.S. Standard Atmosphere, 1976*, NOAA, NASA, US Air Force, Washington, D.C. 227 S. (1976).