

## NDACC Publications – 2016

*Latest updates – 6/23/2021*

2016, Aculinin, A.

C. Brogniez, M. Bengulescu, D. Gillotay, F. Auriol, and L. Wald

Assessment of Several Empirical Relationships for Deriving Daily Means of UV-A Irradiance from  
Meteosat-Based Estimates of the Total Irradiance

Remote Sens., 8, 537

doi: 10.3390/rs8070537

Spectral UV; Satellite; UV Irradiance

2016, Brogniez, C.

F. Auriol, C. Deroo, A. Arola, J. Kujanpss, B. Sauvage, N. Kalakoski, M. R. A. Pitksnen, M. Catalfamo, J.-M.  
Metzger, G. Tournois, and P. Da Conceicao

Validation of satellite-based noontime UVI with NDACC ground-based instruments: influence of  
topography, environment and satellite overpass time

Atmos. Chem. Phys., 16, 15049-15074

doi: 10.5194/acp-16-15049-2016

Spectral UV; Satellite; UV Index; Validation

2016, E. Dammers

M. Palm, M. Van Damme, C. Vigouroux, D. Smale, S. Conway, G. C. Toon, N. Jones, E. Nussbaumer, T.  
Warneke, C. Petri, L. Clarisse, C. Clerbaux, C. Hermans, E. Lutsch, K. Strong, J. W. Hannigan, H. Nakajima,  
I. Morino, B. Herrera, W. Stremme, M. Grutter, M. Schaap, R. J. Wichink Kruit, J. Notholt, P.-F. Coheur  
and J.W. Erisman

An evaluation of IASI-NH<sub>3</sub> with ground-based FTIR measurements

Atmos. Chem. Phys., 16, 10351-10368

doi:10.5194/acp-16-10351-2016

FTIR; NH<sub>3</sub>

2016, Susana Fernandez

Rolf Rüfenacht, Niklaus Kämpfer, Thierry Portafaix, Françoise Posny, and Guillaume Payen

Results from the validation campaign of the ozone radiometer GROMOS-C at the NDACC station of  
Réunion island

Atmos. Chem. Phys., 16, 7531–7543

doi: 10.5194/acp-16-7531-2016

Microwave; Ozone; Validation

2016, Franco, B.

Mahieu, E., Emmons, L. K., Tzompa-Sosa, Z. A., Fischer, E. V, Sudo, K., Bovy, B., Conway, S., Griffin, D.,  
Hannigan, J. W., Strong, K. and Walker, K. A.

Evaluating ethane and methane emissions associated with the development of oil and natural gas extraction in North America  
Environ. Res. Lett., 11(4), 44010  
doi: 10.1088/1748-9326/11/4/044010  
FTIR; C2H4; CH4

2016, Frederick, J. E.  
Solar irradiance observed at Summit, Greenland: Possible links to magnetic activity on short timescales  
J. Atmos. Sol.-Terr. Phys., 147, 59-70  
doi: 10.1016/j.jastp.2016.07.001  
Spectral UV, UV Irradiance

2016, Funatsu B.  
C. Claud, P. Keckhut, A. Hauchecorne, T. Leblanc  
J. Geophys. Res., 2016, 121 (14), 8172-8185  
doi: 10.1002/2015JD024305  
Lidar; Temperature

2016, Gaubert, B., et al.  
Toward a chemical reanalysis in a coupled chemistry-climate model: An evaluation of MOPITT CO assimilation and its impact on tropospheric composition  
Journal of Geophysical Research: Atmospheres, 121(12), 7310-7343  
doi:10.1002/2016JD024863  
FTIR; Model; CO

2016, Maria Jose Granados-Muñoz  
Thierry Leblanc  
Tropospheric ozone seasonal and long-term variability as seen by lidar and surface measurements at the JPL-Table Mountain Facility, California  
Atmos. Chem. Phys., 16, 9299–9319  
doi: 10.5194/acp-16-9299-2016  
Lidar; Ozone

2016, Hall, E. G.  
Jordan, A. F., Hurst, D. F., Oltmans, S. J., Vömel, H., Kühnreich, B. and Ebert, V.  
Advancements, measurement uncertainties and recent comparisons of the NOAA frost point hygrometer  
Atmos. Meas. Tech., 9, 4295–4310  
doi: 10.5194/amt-9-4295-2016  
Sonde; H2O; Validation

2016, Haluza, D.

Simic, S.; Höltge, J.; Cervinka, R.; Moshhammer, H.

Gender aspects of recreational sun-protective behavior: results of a representative, population-based survey among Austrian residents

Photodermatol Photoimmunol Photomed. 32(1):-21

Spectral UV; Health

2016, Haluza, D.

Simic, S.; Moshhammer, H.

Sunbed Use Prevalence and Associated Skin Health Habits: Results of a Representative, Population-Based Survey among Austrian Residents

INT J ENV RES PUB HE. 13(2)

Spectral UV; Health

2016, Haluza, D.

Simic, S.; Moshhammer, H.

Sun Exposure Prevalence and Associated Skin Health Habits: Results from the Austrian Population-Based UVSkinRisk Survey

INT J ENV RES PUB HE. 13(1):

Spectral UV; Health

2016, Petra Hausmann

Ralf Sussmann, and Dan Smale

Contribution of oil and natural gas production to renewed increase in atmospheric methane (2007–2014): top–down estimate from ethane and methane column observations

Atmos. Chem. Phys., 16, 3227–3244,

doi: 10.5194/acp-16-3227-2016

FTIR; CH<sub>4</sub>; C<sub>2</sub>H<sub>6</sub>

2016, Helmig, D.

Rossabi, S., Hueber, J., Tans, P., Montzka, S. A., Masarie, K., Thoning, K., Plass-Duelmer, C., Claude, A., Carpenter, L. J., Lewis, A. C., Punjabi, S., Reimann, S., Vollmer, M. K., Steinbrecher, R., Hannigan, J. W., Emmons, L. K., Mahieu, E., Franco, B., Smale, D. and Pozzer, A.

Reversal of global atmospheric ethane and propane trends largely due to US oil and natural gas production, Nature Geoscience, 9(7), 490-495

doi:10.1038/ngeo2721

FTIR; C<sub>2</sub>H<sub>6</sub>; C<sub>3</sub>H<sub>8</sub>

2016, Karppinen, T.

Lakkala, K., Karhu, J. M., Heikkinen, P., Kivi, R., and Kyrö, E.

Brewer spectrometer total ozone column measurements in Sodankylä

Geosci. Instrum. Method. Data Syst., 5, 229-239

doi: 10.5194/gi-5-229-2016

Brewer; Ozone

2016, Matthäus Kiel

Frank Hase, Thomas Blumenstock, and Oliver Kirner

Comparison of XCO abundances from the Total Carbon Column Observing Network and the Network for the Detection of Atmospheric Composition Change measured in Karlsruhe

Atmos. Meas. Tech., 9, 2223–2239

doi: 10.5194/amt-9-2223-2016

FTIR; XCO

2016, Stefanie Kremser, et al.

Stratospheric aerosol-observations processes, and impact on climate

Rev. Geophysics, 54

doi: 10.1002/2015RG000511

Lidar; Aerosol

2016, Martin Lainer

Klemens Hocke, Niklaus Kämpfer

Variability of mesospheric water vapor above Bern in relation to the 27-day solar rotation cycle

J. of Atmos. and Solar-Terrestrial Phys. 143-144

doi: 10.1016/j.jastp.2016.03.008

Microwave; H<sub>2</sub>O

2016, Thierry Leblanc

Robert J. Sica, Joanna A. E. van Gijssel, Sophie Godin-Beekmann, Alexander Haefele, Thomas Trickl, Guillaume Payen, and Frank Gabarrot

Proposed standardized definitions for vertical resolution and uncertainty in the NDACC lidar ozone and temperature algorithms – Part 1: Vertical resolution

Atmos. Meas. Tech., 9, 4029–4049

doi: 10.5194/amt-9-4029-2016

Lidar; Temperature; Ozone; Algorithm; Validation

2016, Thierry Leblanc, Robert J. Sica, Joanna A. E. van Gijssel, Sophie Godin-Beekmann, Alexander Haefele, Thomas Trickl, Guillaume Payen, and Gianluigi Liberti

Proposed standardized definitions for vertical resolution and uncertainty in the NDACC lidar ozone and temperature algorithms – Part 2: Ozone DIAL uncertainty budget

Atmos. Meas. Tech., 9, 4051–4078

doi: 10.5194/amt-9-4051-2016

Lidar; Ozone; Validation; Algorithm

2016, Thierry Leblanc

Robert J. Sica, Joanna A. E. van Gijzel, Alexander Haefele, Guillaume Payen, and Gianluigi Liberti  
Proposed standardized definitions for vertical resolution and uncertainty in the NDACC lidar ozone and temperature algorithms – Part 3: Temperature uncertainty budget

Atmos. Meas. Tech., 9, 4079–4101

doi: 10.5194/amt-9-4079-2016

Lidar; Temperature; Algorithm; Validation

2016, E. Lutsch

E. Dammers, S. Conway, and K. Strong

Long-range Transport of NH<sub>3</sub>, CO, HCN and C<sub>2</sub>H<sub>6</sub> from the 2014 Canadian Wildfires

Geophys. Res. Lett., 43, 8286–8297

doi:10.1002/2016GL070114

FTIR; NH<sub>3</sub>; CO; HCN; C<sub>2</sub>H<sub>6</sub>

2016, Lorena Moreira

Klemens Hocke, Francisco Navas-Guzmán, Ellen Eckert, Thomas von Clarmann, and Niklaus Kämpfer

The natural oscillations in stratospheric ozone observed by the GROMOS microwave radiometer at the NDACC station Bern

Atmos. Chem. Phys., 16, 10455–10467

doi: 10.5194/acp-16-10455-2016

Microwave; Ozone

2016, Moshhammer, H.

Simic, S.; Haluza, D.

UV 'Indices'-What Do They Indicate?"

INT J ENV RES PUB HE. 13(10)

Spectral UV; Erythemal UV

2016, Gerald E. Nedoluha

Brian J. Connor, Thomas Mooney, James W. Barrett, Alan Parrish, R. Michael Gomez, Ian Boyd, Douglas R. Allen, Michael Kotkamp, Stefanie Kremser, Terry Deshler, Paul Newman, and Michelle L. Santee

20 years of ClO measurements in the Antarctic lower stratosphere

Atmos. Chem. Phys., 16, 10725–10734

doi: 10.5194/acp-16-10725-2016

Microwave; ClO

2016, Andreas Reichert

Ralf Sussmann

The Zugspitze radiative closure experiment for quantifying water vapor absorption over the terrestrial and solar infrared – Part 3: Quantification of the mid- and near-infrared water vapor continuum in the 2500 to 7800 cm<sup>-1</sup> spectral range under atmospheric conditions

Atmos. Chem. Phys., 16, 11671–11686

doi: 10.5194/acp-16-11671-2016

FTIR; H<sub>2</sub>O

2016, Andreas Reichert

Markus Rettinger, and Ralf Sussmann

The Zugspitze radiative closure experiment for quantifying water vapor absorption over the terrestrial and solar infrared – Part 2: Accurate calibration of high spectral-resolution infrared measurements of surface solar radiation

Atmos. Meas. Tech., 9, 4673–4686

doi: 10.5194/amt-9-4673-2016

FTIR; H<sub>2</sub>O; Validation

2016, Robles-Gonzalez, C.

Navarro-Comas, M., Puentedura, O., Schneider, M., Hase, F., Garcia, O., Blumenstock, T., Gil-Ojeda, M.

Intercomparison of stratospheric nitrogen dioxide columns retrieved from ground-based DOAS and FTIR and satellite DOAS instruments over the subtropical Izana station

Atmos. Meas. Tech., 9, 4471-4485,

doi: 10.5194/amt-9-4471-2016

UVVis; FTIR; NO<sub>2</sub>; CalVal

2016, Ronsmans, G., et al

First characterization and validation of FORLI-HNO<sub>3</sub> vertical profiles retrieved from IASI/Metop

Atmos. Meas. Tech., 9, 4783-4801

doi: 10.5194/amt-9-4783-2016

FTIR; HNO<sub>3</sub>; Satellite; Validation

2016, Rüfenacht, R.

Hocke, K.; Kämpfer, N.

First Continuous Ground-Based Observations of Long Period Oscillations in the Vertically Resolved Wind Field of the Stratosphere and Mesosphere

Atmospheric Chemistry and Physics, 16 (8), 4915-4925

doi: 10.5194/acp-16-4915-2016.

Microwave; Wind

2016, Schneider, M.

Wiegele, A., Barthlott, S., Gonzolez, Y., Christner, E., Dyroff, C., Garcia, O. E., Hase, F., Blumenstock, T., Sepalveda, E., Mengistu Tsidu, G., Takele Kenea, S., Rodriguez, S., and Andrey, J.

Accomplishments of the MUSICA project to provide accurate, long-term, global and high-resolution observations of tropospheric {H<sub>2</sub>O,dD} pairs - a review

Atmos. Meas. Tech., 9, 2845-2875

doi: 10.5194/amt-9-2845-2016

FTIR; H2O

2016, Schrempf, M.

Haluza, D.; Simic, S.; Riechelmann, S.; Graw, K.; Seckmeyer, G.

Is Multidirectional UV Exposure Responsible for Increasing Melanoma Prevalence with Altitude? A Hypothesis Based on Calculations with a 3D-Human Exposure Model

INT J ENV RES PUB HE. 13(10)

Spectral UV; Health

2016, R. J. Sica

A. Haefele

Retrieval of water vapor mixing ratio from a multiple channel Raman-scatter lidar using an optimal estimation method

Appl. Opt. 55, 763-777

Lidar; H2O

2016, Ralf Sussmann, Andreas Reichert, and Markus Rettinger

The Zugspitze radiative closure experiment for quantifying water vapor absorption over the terrestrial and solar infrared – Part 1: Setup, uncertainty analysis, and assessment of far-infrared water vapor continuum

Atmos. Chem. Phys., 16, 11649–11669

doi: 10.5194/acp-16-11649-2016

FTIR; H2O; Validation

2016, Tao, Y., et al

Seasonal variability of surface and column carbon monoxide over the megacity Paris, high-altitude Jungfrauoch and Southern Hemispheric Wollongong stations

Atmos. Chem. Phys., 16(17), 10911-10925

doi: 10.5194/acp-16-10911-2016

FTIR; CO

2016, Thölix, L.

Backman, L., Kivi, R., and Karpechko, A. Yu.

Variability of water vapor in the Arctic stratosphere

Atmos. Chem. Phys., 16, 4307-4321

doi: 10.5194/acp-16-4307-2016

Sonde; H2O

2016, Timofeyev Yury

Yana Virolainen, Maria Makarova, Anatoly Poberovsky, Alexander Polyakov, Dmitry Ionov, Sergey Osipov, Hamud Imhasin,

Ground-based spectroscopic measurements of atmospheric gas composition near Saint Petersburg (Russia)

J. Mol.Spectr., 323,

doi: 10.1016/j.jms.2015.12.007

FTIR

2016, Van Malderen, R.

Allaart, M. A. F., De Backer, H., Smit, H. G. J., and De Muer, D.

On instrumental errors and related correction strategies of ozonesondes: possible effect on calculated ozone trends for the nearby sites Uccle and De Bilt

Atmos. Meas. Tech., 9, 3793-3816, doi:10.5194/amt-9-3793-2016

Sonde; Ozone; Validation; Trends

2016, Vömel, H.

T. Naebert, R. Dirksen, and M. Sommer

An update on the uncertainties of water vapor measurements using Cryogenic Frostpoint Hygrometers

Atmos. Meas. Tech., 9, 3755-3768

doi: 10.5194/amt-9-3755-2016

Sonde; H<sub>2</sub>O; Validation

2016, Wang, Y., et al

Towards understanding the variability in biospheric CO<sub>2</sub> fluxes: using FTIR spectrometry and a chemical transport model to investigate the sources and sinks of carbonyl sulfide and its link to CO<sub>2</sub>

Atmos. Chem. Phys., 16(4), 2123-2138

doi: 10.5194/acp-16-2123-2016

FTIR; CO<sub>2</sub>; OCS

2016, Xiaoyi Zhao

Vitali Fioletov, Alexander Cede, Jonathan Davies, and Kimberly Strong

Accuracy, precision, and temperature dependence of Pandora total ozone measurements estimated from a comparison with the Brewer triad in Toronto

Atmos. Meas. Tech., 9, 5747–5761,

doi: 10.5194/amt-9-5747-2016

Brewer; Temperature; Ozone; Validation

2016, X. Zhao

K. Strong, C. Adams, R. Schofield, X. Yang, A. Richter, U. Friess, A.M. Blechschmidt, and J.H. Koo

A case study of a transported bromine explosion event in the Canadian high Arctic

J. Geophys. Res.: Atmos. 121, 457-477

UVVis; Sonde; BrO

2016, Zhou, M.



Vigouroux, C., Langerock, B., Wang, P., Dutton, G., Hermans, C., Kumps, N., Metzger, J.-M., Toon, G., and De Mazière, M.

CFC-11, CFC-12 and HCFC-22 ground-based remote sensing FTIR measurements at Réunion Island and comparisons with MIPAS/ENVISAT data

Atmos. Meas. Tech., 9, 5621-5636

doi: [10.5194/amt-9-5621-2016](https://doi.org/10.5194/amt-9-5621-2016)

FTIR; Satellite; CFC; HCFC; Validation