

Prof. Dr. Johannes Orphal: Scientific publications (1990-2019)

ISI Web of Knowledge: 163 papers, h=33, 10864 citations

Scopus: 175 papers, h=34, 11292 citations

Google Scholar: h=39, 13706 citations

A) Papers in Scientific Journals

1. S. Johansson, M. L. Santee, J.-U. Grooß, M. Höpfner, M. Braun, F. Friedl-Vallon, F. Khosrawi, O. Kirner, E. Kretschmer, H. Oelhaf, **J. Orphal**, B.-M. Sinnhuber, I. Tritscher, J. Ungermann, K. A. Walker, and W. Woiwode, „Unusual chlorine partitioning in the 2015/16 Arctic winter lowermost stratosphere: Observations and simulations”, *Atmospheric Chemistry and Physics*, in review.
2. F. R. Vogel, M. Frey, J. Staufer, Q. Tu, G. Broquet, I. Xueref-Remy, F. Chevallier, P. Ciais, M. K. Sha, P. Chelin, P. Jeseck, Y. V. Te, T. Blumenstock, **J. Orphal**, and F. Hase, „XCO₂ in an emission hot-spot region: the COCCON Paris campaign 2015”, *Atmospheric Chemistry and Physics*, in review.
3. M. Frey, M. K. Sha, F. Hase, M. Kiel, T. Blumenstock, R. Harig, G. Surawicz, N. M. Deutscher, K. Shiomi, J. Franklin, H. Bösch, J. Chen, M. Grutter, H. Ohyama, Y. Sun, A. Butz, G. M. Tsidu, D. Ene, D. Wunch, C. Z. Song, O. Garcia, M. Ramonet, F. Vogel, and **J. Orphal**, „Building the COLlaborative Carbon Column Observing Network (COCCON): Long term stability and ensemble performance of the EM27/SUN Fourier transform spectrometer”, *Atmospheric Measurement Techniques*, in review.
4. J.-M. Flaud, A. Anantharajah, F. Kwabia Tchana, L. Manceron, **J. Orphal**, G. Wagner, and M. Birk, „High-resolution analysis of the 12.6 μm spectral region of the nitril chloride ClNO₂ molecule”, *Journal of Quantitative Spectroscopy and Radiative Transfer* 154, 91-97, 2019.
5. W. Woiwode, A. Dörnbrack, M. Bramberger, F. Friedl-Vallon, F. Haenel, M. Höpfner, S. Johansson, E. Kretschmer, I. Krisch, T. Latzko, H. Oelhaf, **J. Orphal**, P. Preusse, B.-M. Sinnhuber, and J. Ungermann, „Mesoscale fine structure of a tropopause fold over mountains”, *Atmospheric Chemistry and Physics* 18, 15643-15667, 2018.
6. S. Johansson, W. Woiwode, M. Höpfner, F. Friedl-Vallon, A. Kleinert, E. Kretschmer, T. Latzko, **J. Orphal**, P. Preusse, J. Ungermann, M. L. Santee, T. Jurkat-Witschas, A. Marsing, C. Voigt, A. Giez, M. Krämer, C. Rolf, A. Zahn, A. Engel, B.-M. Sinnhuber, and H. Oelhaf, „Airborne limb-imaging measurements of temperature, HNO₃, O₃, ClONO₂, H₂O and CFC-12 during the Arctic winter 2015/16: characterization, in-situ validation and comparison to Aura/MLS”, *Atmospheric Measurement Techniques* 11, 4737-4756, 2018.
7. N. Glatthor, T. von Clarmann, G. P. Stiller, M. Kiefer, A. Laeng, B. M. Dinelli, G. Wetzels, and **J. Orphal**, „Differences in ozone retrieval in MIPAS channels A and AB: a spectroscopic issue”, *Atmospheric Measurement Techniques* 11, 4707-4723, 2018.
8. A. Zarbo, S. Bender, J. P. Burrows, **J. Orphal**, and M. Sinnhuber, „Retrieval of O₂(¹ Σ) and O₂(¹ Δ) volume emission rates in the mesosphere and lower thermosphere using SCIAMACHY MLT limb scans”, *Atmospheric Measurement Techniques* 11, 473-487, 2018.
9. G. Wetzels, H. Oelhaf, M. Höpfner, F. Friedl-Vallon, A. Ebersoldt, T. Gulde, S. Kazarski, O. Kirner, A. Kleinert, G. Maucher, H. Nordmeyer, **J. Orphal**, R. Ruhnke, and B.-M. Sinnhuber, „Diurnal variations of BrONO₂ observed by MIPAS-B at mid-latitudes and in the Arctic”, *Atmospheric Chemistry and Physics* 17, 14631-14643, 2017.
10. **J. Orphal**, M. Birk, G. Wagner, and J.-M. Flaud, „Analysis of the ν_8 and $\nu_8+\nu_9$ band spectral regions of BrONO₂ and first determination of the ν_9 band center at 111.9(7) cm⁻¹”, *Chemical Physics Letters* 690, 82-85, 2017.
11. G. Fischbeck, H. Bönisch, M. Neumaier, C. A. M. Brenninkmeijer, **J. Orphal**, J. Brito, J. Becker, D. Sprung, P. van Velthoven, and A. Zahn, „Acetone-CO enhancement ratios in the upper troposphere based on 7 years of CARIBIC data: New insights and estimates of regional acetone fluxes”, *Atmospheric Chemistry and Physics* 17, 1985-2008, 2017.

12. M. Höpfner, R. Volkamer, U. Grabowski, M. Grutter, **J. Orphal**, G. Stiller, T. von Clarmann, and G. Wetzel, „First detection of ammonia (NH₃) in the Asian monsoon upper troposphere”, *Atmospheric Chemistry and Physics* 16, 14357-14369, 2016.
13. **J. Orphal**, J. Staehelin, J. Tamminen, G. Braathen, M.-R. De Backer, A. Bais, D. Balis, A. Barbe, P. K. Bhartia, M. Birk, J. W. Burkholder, K. V. Chance, T. von Clarmann, A. Cox, D. Degenstein, R. Evans, J.-M. Flaud, D. Flittner, S. Godin-Beekmann, V. Gorshchev, A. Gratien, E. Hare, C. Janssen, E. Kyrölä, T. McElroy, R. McPeters, M. Pastel, M. Petersen, I. Petropavlovskikh, B. Picquet-Varrault, M. Pitts, G. Labow, M. Rotger-Languereau, T. Leblanc, C. Lerot, X. Liu, P. Moussay, A. Redondas, M. Van Roozendaal, S. P. Sander, M. Schneider, A. Serdyuchenko, P. Veefkind, J. Viallon, C. Viatte, G. Wagner, M. Weber, R. I. Wielgosz, and C. Zehner, „Absorption Cross-Sections of Ozone in the Ultraviolet and Visible Spectral Regions – Status Report 2015”, *Journal of Molecular Spectroscopy* 327, 105-121, 2016.
14. N. Jacquinet, R. Armante, N. A. Scott, A. Chédin, L. Crépeau, C. Boutammine, A. Bouhdaoui, C. Crevoisier, V. Capelle, C. Boone, N. Poulet-Crovisier, A. Barbe, D. C. Benner, V. Boudon, L. R. Brown, J. Buldyreva, A. Campargue, L. H. Coudert, V. M. Devi, M. J. Down, B. J. Drouin, A. Fayt, C. Fittschen, J.-M. Flaud, R. R. Gamache, J. J. Harrison, C. Hill, D. Jacquemart, E. Jimenez, A. Jolly, N. Lavrentieva, L. Lodi, A. Nikitin, O. Hodnebrog, A. Makie, S. T. Massie, S. Mikhailenko, H. S. P. Müller, O. V. Naumenko, C. J. Nielsen, **J. Orphal**, V. Perevalov, A. Perrin, E. Polovtsera, A. Predoi-Cross, M. Rotger, A. A. Ruth, Y. Shanshan, K. Sung, S. Tashkun, J. Tennyson, V. G. Tyuterev, and J. Vander Auwera, „The 2015 edition of the GEISA spectroscopic database”, *Journal of Molecular Spectroscopy* 327, 31-72, 2016.
15. W. Woiwode, M. Höpfner, L. Bi, M. C. Pitts, L. R. Poole, H. Oelhaf, S. Molleker, S. Borrmann, M. Klingebiel, G. Belyaev, A. Ebersoldt, S. Griessbach, J.-U. Grooß, T. Gulde, M. Krämer, G. Maucher, C. Piesch, C. Rolf, C. Sartorius, R. Spang, and **J. Orphal**, „Spectroscopic evidence for large aspherical β -NAT particles involved in denitrification in the December 2011 Arctic stratosphere”, *Atmospheric Chemistry and Physics* 16, 9505-9532, 2016.
16. E. Eckert, A. Laeng, S. Lossow, S. Kellmann, G. Stiller, T. von Clarmann, N. Glatthor, M. Höpfner, M. Kiefer, H. Oelhaf, **J. Orphal**, B. Funke, U. Grabowski, F. Haenel, A. Linden, G. Wetzel, W. Woiwode, P. F. Bernath, C. Boone, G. S. Dutton, J. W. Elkins, A. Engel, J. C. Gille, F. Kolonjari, T. Sugita, G. C. Toon, and K. A. Walker, „MIPAS IMK/IAA CFC-11 (CCl₃F) and CFC-12 (CCl₂F₂) measurements: accuracy, precision and long-term stability”, *Atmospheric Measurement Techniques* 9, 3355-3389, 2016.
17. F. Hase, M. Frey, M. Kiel, T. Blumenstock, R. Harig, A. Keens, and **J. Orphal**, „Addition of a channel for XCO observations to a portable FTIR spectrometer for greenhouse gas measurements”, *Atmospheric Measurement Techniques* 9, 2303-2313, 2016.
18. M. Chirkov, G. P. Stiller, A. Laeng, S. Kellmann, T. von Clarmann, C. D. Boone, J. W. Elkins, A. Engel, N. Glatthor, U. Grabowski, C. M. Harth, M. Kiefer, F. Kolonjari, P. B. Krummel, A. Linden, C. R. Lunder, B. R. Miller, S. A. Montzka, J. Mühle, S. O'Doherty, **J. Orphal**, R. G. Prinn, G. Toon, M. K. Vollmer, K. A. Walker, R. F. Weiss, A. Wiegeler, and D. Young, „Global HCFC-22 measurements with MIPAS: retrieval, validation, global distribution and its evolution over 2005-2012”, *Atmospheric Chemistry and Physics* 16, 3345-3368, 2016.
19. A. Butz, **J. Orphal**, R. Checa-Garcia, F. Friedl-Vallon, T. von Clarmann, H. Bovensmann, O. Hasekamp, J. Landgraf, T. Knigge, D. Weise, O. Sqalli-Houssini, and D. Kemper, „Geostationary Emission Explorer for Europe (G3E): mission concept and initial performance assessment”, *Atmospheric Measurement Techniques* 8, 4719-4734, 2015.
20. J. Cuesta, M. Eremenko, C. Flamant, G. Dufour, B. Laurent, G. Bergametti, M. Höpfner, **J. Orphal**, D. Zhou, „Three-dimensional distribution of a major desert dust outbreak over East Asia in March 2008 derived from IASI satellite observations”, *Journal of Geophysical Research D (Atmospheres)* 120, 7099-7127, 2015.
21. F. Hase, M. Frey, T. Blumenstock, J. Gross, M. Kiel, R. Kohlhepp, G. M. Tsidu, K. Schäfer, M. K. Sha, and **J. Orphal**, „Application of portable FTIR spectrometers for detecting greenhouse gas emissions of the major city Berlin”, *Atmospheric Measurement Techniques* 8, 3059-3068, 2015.
22. M. Frey, F. Hase, T. Blumenstock, J. Gross, M. Kiel, G. M. Tsidu, K. Schäfer, M. K. Sha, and **J. Orphal**, „Calibration and instrumental line shape characterization of a set of portable FTIR spectrometers for detecting greenhouse gas emissions”, *Atmospheric Measurement Techniques* 8, 3047-3057, 2015.

23. G. Wetzel, H. Oelhaf, M. Birk, A. de Lange, A. Engel, F. Friedl-Vallon, O. Kirner, A. Kleinert, G. Maucher, H. Nordmeyer, **J. Orphal**, R. Ruhnke, B.-M. Sinnhuber, and P. Vogt, „Partitioning and budget of inorganic and organic chlorine species observed by MIPAS-B and TELIS in the Arctic in March 2011”, *Atmospheric Chemistry and Physics* 15, 8065-8076, 2015.
24. M. Buchwitz, M. Reuter, O. Schneising, H. Boesch, S. Guerlet, B. Dils, I. Aben, R. Armante, P. Bergamaschi, T. Blumenstock, H. Bovensmann, D. Brunner, B. Buchmann, J. P. Burrows, A. Butz, A. Chedin, F. Chevallier, C. D. Crevoisier, N. Deutscher, C. Frankenberg, O. P. Hasekamp, J. Heymann, T. Kaminski, A. Laeng, G. Lichtenberg, M. De Maziere, S. Noel, J. Notholt, **J. Orphal**, C. Popp, R. Parker, M. Scholze, R. Sussmann, G. P. Stiller, T. Warneke, C. Zehner, A. Bril, D. Crisp, D. Griffith, A. Kuze, C. O'Dell, S. Oshchepkov, V. Sherlock, H. Suto, P. Wennberg, D. Wunch, T. Yokota, and Y. Yoshida, „The Greenhouse Gas Climate Change Initiative (GHG-CCI): comparison and quality assessment of near-surface sensitive satellite-derived CO₂ and CH₄ global data sets”, *Remote Sensing of Environment* 162, 344-362, 2015.
25. A. Perrin, G. C. Toon, and **J. Orphal**, „Detection of atmospheric ¹⁵NO₂ in the ν₃ spectral region (6.3 μm)”, *Journal of Quantitative Spectroscopy and Radiative Transfer* 154, 91-97, 2015.
26. M. Kaufmann, J. Blank, T. Guggenmoser, J. Ungermann, A. Engel, M. Ern, F. Friedl-Vallon, D. Gerber, J. U. Grooss, G. Guenther, M. Höpfner, A. Kleinert, T. Latzko, G. Maucher, T. Neubert, H. Nordmeyer, H. Oelhaf, F. Olschewski, **J. Orphal**, P. Preusse, H. Schlager, H. Schneider, D. Schuettemeyer, F. Stroh, O. Suminska-Ebersoldt, B. Vogel, M. Volk, J. Wintel, W. Woiwode, and M. Riese, „Retrieval of three-dimensional small scale structures in upper tropospheric / lower stratospheric composition as measured by GLORIA”, *Atmospheric Measurement Techniques* 8, 81-95, 2015.
27. W. Woiwode, O. Suminska-Ebersoldt, H. Oelhaf, M. Höpfner, G. V. Belyaev, A. Ebersoldt, F. Friedl-Vallon, J.-U. Grooß, T. Gulde, M. Kaufmann, A. Kleinert, M. Krämer, E. Kretschmer, T. Kulesa, G. Maucher, T. Neubert, C. Piesch, P. Preusse, M. Riese, H. Rongen, C. Sartorius, G. Schardt, A. Schönfeld, D. Schuettemeyer, M. K. Sha, F. Stroh, J. Ungermann, C. M. Volk, and **J. Orphal**, „Validation of first chemistry mode retrieval results from new limb-imaging FTS GLORIA with correlative MIPAS-STR observations”, *Atmospheric Chemistry and Physics* 8, 2509-2520, 2015.
28. A. A. Ruth, S. Dixneuf, and **J. Orphal**, „Laser-induced plasmas in ambient air for incoherent broadband cavity-enhanced absorption spectroscopy”, *Optics Express* 23, 6092-6101, 2015.
29. F. Friedl-Vallon, T. Gulde, F. Hase, A. Kleinert, T. Kulesa, G. Maucher, T. Neubert, F. Olschewski, C. Piesch, P. Preusse, H. Rongen, C. Sartorius, H. Schneider, A. Schönfeld, V. Tan, N. Bayer, J. Blank, R. Dapp, A. Ebersoldt, H. Fischer, F. Graf, T. Guggenmoser, M. Höpfner, M. Kaufmann, E. Kretschmer, T. Latzko, H. Nordmeyer, H. Oelhaf, **J. Orphal**, M. Riese, G. Schardt, J. Schillings, M. K. Sha, O. Suminska-Ebersoldt, and J. Ungermann, „Instrument concept of the imaging Fourier transform spectrometer GLORIA”, *Atmospheric Measurement Techniques* 7, 3565-3577, 2014.
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31. W. Woiwode, J.-U. Grooß, H. Oelhaf, S. Molleker, S. Borrmann, A. Ebersoldt, W. Frey, T. Gulde, S. Khaykin, C. Piesch, and **J. Orphal**, „Denitrification by large NAT particles: the impact of reduced settling velocities and hints on particle characteristics”, *Atmospheric Chemistry and Physics* 14, 11525-11544, 2014.
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34. R. Raghunandan, A. Perrin, A. A. Ruth, and **J. Orphal**, „First analysis of the 2ν₁+3ν₃ band of NO₂ at 7192.159 cm⁻¹”, *Journal of Molecular Spectroscopy* 297, 4-10, 2014.

35. G. Wetzel, H. Oelhaf, F. Friedl-Vallon, A. Kleinert, G. Maucher, H. Nordmeyer, and **J. Orphal**, „Long-term intercomparison of MIPAS additional species ClONO_2 , N_2O_5 , CFC-11 and CFC-12 with MIPAS-B measurements”, *Annals of Geophysics* 56, doi:10.4401/ag-6329, 2013.
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39. J. Cuesta, M. Eremenko, X. Liu, G. Dufour, Z. Cai, M. Höpfner, T. von Clarmann, P. Sellito, G. Foret, B. Gaubert, **J. Orphal**, K. V. Chance, R. Spurr, and J.-M. Flaud, „Lowermost tropospheric ozone observation by multispectral synergism of IASI thermal IR and GOME-2 UV satellite measurements”, *Atmospheric Chemistry and Physics* 13, 9675-9693, 2013.
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