

Prof. Dr. Susanne Crewell | Publications

My publication record spans a wide range of topics

- with more than 100 peer-reviewed publications as of 27 April 2020
Publons O-1640-2013: 130 publications, 2699 citations, h-index=29
Scopus: 132 Publications, 2715 citations, h-index = 29
[Google](#): 4526 citations, h-index = 40
- and book contributions/review reports related to observational techniques and the future development of measurement strategies.

Below also invited talks and specific reports of interest are given. The full list of my publications including conference contributions, talks and posters can be found at

http://gop.meteo.uni-koeln.de/ag_crewell/doku.php?id=publications:publications

Accepted peer-reviewed publications

Böhm, C., M. Reyers, J. Schween, S. Crewell, How well can we describe the water vapor variability in the Atacama desert over the last 100 years? *Global and Planetary Change*, 103192

Costa-Surós, M., Sourdeval, O., Acquistapace, C., Baars, H., Carbajal Henken, C., Genz, C., Hesemann, J., Jimenez, C., König, M., Kretzschmar, J., Madenach, N., Meyer, C. I., Schrödner, R., Seifert, P., Senf, F., Brueck, M., Cioni, G., Engels, J. F., Fieg, K., Gorges, K., Heinze, R., Siligam, P. K., Burkhardt, U., Crewell, S., Hoose, C., Seifert, A., Tegen, I., and Quaas, J.: Detection and attribution of aerosol-cloud interactions in large-domain large-eddy simulations with ICON, *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2019-850>, accepted 19 March 2020

Ruiz-Donoso, E., A. Ehrlich, M. Schäfer, E. Jäkel, Vera Schemann, S. Crewell, M. Mech, B.S. Kulla, L.-L. Kliesch, R. Neuber, and M. Wendisch: Small-scale structure of thermodynamic phase in Arctic mixed-phase clouds observed by airborne remote sensing during a cold air outbreak and a warm air advection event, *Atmospheric Measurement Technology*, <https://doi.org/10.5194/acp-2019-960>, accepted 3 April 2020

Stevens, B., C. Acquistapace, A. Hansen, R. Heinze, C. Klinger, D. Klocke, W. Schubotz, J. Windmiller, P. Adamidis, I. Arka, V. Barlakas, J. Biercamp, M. Brueck, S. Brune, S. Buehler, U. Burkhardt, G. Cioni, M. Costa-Surós, S., Crewell, T. Crueger, H. Deneke, P. Friederichs, C. Carbajal Henken, C. Hohenegger, M. Jacob, F. Jakub, N. Kalthoff, M. Köhler, T. W. van Laar, P. Li, U. Löhnert, A. Macke, N. Madenach, B. Mayer, C. Nam, A. K. Naumann, K. Peters, S. Poll, J. Quaas, N. Röber, N. Rochetin, H. Rybka, L. Scheck, V. Schemann, S. Schnitt, A. Seifert, F. Senf, M. Shapkalijevski, C. Simmer, S. Singh, O. Sourdeval, D. Spickermann, J. Strandgren, O. Tessiot, N. Vercauteren, J. Vial, A. Voigt, G. Zängl. : Large-eddy and Storm Resolving Models for Climate Prediction - The Added Value for Clouds and Precipitation, *Journal of the Meteorological Society of Japan*, accepted 31.12.2019

Peer-reviewed publications

1. Frank, C. W., B. Pospichal, S. Wahl, J. D. Keller, A. Hense, and S. Crewell, 2020: The added value of high resolution regional reanalyses for wind power applications, *Renewable Energy*, 148, 1094-1109, <https://doi.org/10.1016/j.renene.2019.09.138>.
2. Henken, C., L. Dirks, S. Steinke, H. Diedrich, T. August, and S. Crewell, 2020: Assessment of Sampling Effects of Various Satellite-derived Integrated Water Vapor Datasets Using GPS Measurements in Germany as Reference, *Remote Sensing*, 12, 1170, <https://doi.org/10.3390/rd12071170>.
3. Marke, T., Löhnert, U., Schemann, V., Schween, J. H., and S. Crewell, 2020: Detection of land-surface-induced atmospheric water vapor patterns, *Atmospheric Chemistry and Physics*, 20, 1723-1736, <https://doi.org/10.5194/acp-20-1723-2020>.
4. Mech, M., L.-L. Kliesch, A. Anhäuser, T. Rose, P. Kollias and S. Crewell, 2019: Microwave Radar/radiometer for Arctic Clouds MiRAC: first insights from the ALOUD campaign, *Atmospheric Measurement Techniques*, 12, 5019-5037, <https://doi.org/10.5194/amt-12-5019-2019>.

5. Rinke A., B. Segger, S. Crewell, M. Maturilli, T. Naakka, T. Nygard, T. Vihma, F. Alshawaf, G. Dick, J. Wickert and J. Kellert, 2019: Trends of vertically integrated water vapor over the Arctic during 1979-2016: Consistent moistening all over? *Journal of Climate*, <https://doi.org/10.1175/JCLI-D-19-0092.1>
6. Lammert, A., A. Hansen, F. Ament, S. Crewell, G. Dick, V. Grützun, H. Klein-Baltink, V. Lehmann, A. Macke, B. Pospichal, W. Schubotz, P. Seifert, E. Stamnas, and B. Stevens, 2019: A Standardized Atmospheric Measurement Data (SAMD) Archive for distributed cloud and precipitation process-oriented observations in Central Europe, *Bulletin of the American Meteorological Society*, 100(7), 1299-1314, <https://doi.org/10.1175/BAMS-D-18-0174.1> 12, 3237-3254
7. Konow, H., M. Jacob, F. Ament, S. Crewell, F. Ewald, M. Hagen, L. Hirsch, F. Jansen, M. Mech, B. Stevens, 2019: A unified data set of airborne cloud remote sensing using the HALO Microwave Package (HAMP), *Earth System Science Data*, 11, 921-934, <https://doi.org/10.5194/essd-2018-116>.
8. Jacob, M., F. Ament, M. Gutleben, H. Konow, M. Mech, M. Wirth, and S. Crewell, 2019: Investigating the liquid water path over the tropical Atlantic with synergistic airborne measurements, *Atmospheric Measurement Techniques*, 12, 3237-3254, <https://doi.org/10.5194/amt-12-3237-2019>.
9. Wendisch, M, A. Macke, A. Ehrlich, C. Lüpkes, M. Mech, D. Chechin, K. Dethloff, C. Barientos, H. Bozem, M. Brückner, H.-C. Clemen, S. Crewell, T. Donth, R. Dupuy, C. Dusny, K. Ebell, U. Egerer, R. Engelmann, C. Engler, O. Eppers, M. Gehrman, X. Gong, M. Gottschalk, C. Gourbeyre, H. Griesche, J. Hartmann, M. Hartmann, B. Heinold, A. Herber, H. Herrmann, G. Heygster, P. Hoor, S. Jafariserajehlou, E. Jäkel, E. Järvinen, O. Jourdan, U. Kästner, S. Kecorius, E. M. Knudsen, F. Köllner, J. Kretschmar, L. Lelli, D. Leroy, M. Maturilli, L. Mei, S. Mertes, G. Mioche, R. Neuber, M. Nicolaus, T. Nomokonova, J. Notholt, M. Palm, M. van Pinxteren, J. Quaas, P. Richter, E. Ruiz-Donoso, M. Schäfer, K. Schmieder, M. Schnaiter, J. Schneider, A. Schwarzenböck, P. Seifert, M. D. Shupe, H. Siebert, G. Spreen, J. Stapf, F. Stratmann, T. Vogl, A. Welti, H. Wex, A. Wiedensohler, M. Zanatta, and S. Zeppenfeld, 2019: The Arctic Cloud Puzzle: Using ALOUD/PASCAL Multi-Platform Observations to Unravel the Role of Clouds and Aerosol Particles in Arctic Amplification. *Bulletin of the American Meteorological Society*, 100 (5), 841-871, <https://doi.org/10.1175/BAMS-D-18-0072.1>.
10. Böhm, C., O. Sourdeval, J. Mülmenstädt, J. Quaas, and S. Crewell, 2019: Cloud base height retrieval from multi-angle satellite data, *Atmospheric Measurement Techniques*, 12, 1841-1860, <https://doi.org/10.5194/amt-12-1841-2019>.
11. Wolf, K., A. Ehrlich, M. Jacob, S. Crewell, M. Wirth, and M. Wendisch, 2019: Improvement of Airborne Retrievals of Cloud Droplet Number Concentration of Trade Wind Cumulus Using a Synergetic Approach, *Atmospheric Measurement Techniques*, 12, 1635-1658, <https://doi.org/10.5194/amt-12-1635-2019>
12. Neher, I., T. Buchmann, S. Crewell, B. Pospichal, S. Meilinger: Impact of atmospheric aerosols on solar energy production - Dust outbreak in West Africa, *Meteorologische Zeitschrift* Vol. 28 No. 4 (2019), p. 305 - 321, <https://doi.org/10.1127/metz/2019/0969>.
13. Steinke, S., S. Wahl and S. Crewell, 2019: Benefit of high resolution COSMO reanalysis: The diurnal cycle of column-integrated water vapour over Germany, *Meteorologische Zeitschrift*, 28(2), 165 – 177, <https://doi.org/10.1127/metz/2019/0936>.
14. Radovan A., S. Crewell, E.M. Knudsen and A. Rinke: Environmental conditions for polar low formation and development over the Nordic Seas: study of January cases based on the Arctic System Reanalysis, *Tellus A: Dynamic Meteorology & Oceanography*, 71, 1-16, <https://doi.org/10.1080/16000870.2019.1618131>.
15. Stevens, B., F. Ament, S. Bony, S. Crewell, S. Groß, L. Hirsch, B. Mayer, M. Wendisch, M. Wirth, S. Bakan, H.-M. Brück, A. Ehrlich, F. Ewald, D. Farrell, M. Forde, F. Gödde, H. Grob, M. Hagen, A. Hansen, M. Jacob, E. Jäkel, F. Jansen, C. Klepp, M. Klingebiel, H. Konow, M. Mech, G. Peters, M. Rapp, A. Wing, K. Wolf, 2019: A High-Altitude Long-Range Aircraft Configured as a Cloud Observatory: The NARVAL Expedition, *Bulletin of the American Meteorological Society*, 100 (5), 1061–1077, <https://doi.org/10.1175/BAMS-D-18-0198.1>
16. Aires, F., C. Prigent, M. Milz, S. Buehler, P. Eriksson, and S. Crewell, 2018: Towards more realistic hypotheses for the information content analysis of cloudy/precipitating situations - Application to a hyperspectral instrument in the microwaves, *Quarterly Journal of the Royal Meteorological Society*, 145:1–14, <https://doi.org/10.1002/qj.3315>

17. Marke, T., S. Crewell, V. Schemann, J. H. Schween, and M. Tuononen, 2018: Long-Term Observations and High Resolution Modeling of Mid-Latitude Nocturnal Boundary-Layer Processes Connected to Low-Level-Jets, *Journal of Applied Meteorology and Climatology*, 57(5), 1155-1170, <https://doi.org/10.1175/JAMC-D-17-0341.1>.
18. Frank, C. W., S. Wahl, J.D. Keller, B. Pospichal, A. Hense, and S. Crewell, 2018: A novel data set for solar energy applications based on high resolution reanalysis, *Solar Energy*, 164, 12-24, <https://doi.org/10.5194/acp-18-17995-2018>.
19. Schäfler, A., G. Craig, H. Wernli, P. Arbogast, J.D. Doyle, R. McTaggart-Cowan, J. Methven, G. Rivière, F. Ament, M. Boettcher, M. Bramberger, Q. Cazenave, R. Cotton, S. Crewell, J. Delanoë, A. Dörnbrack, A. Ehrlich, F. Ewald, A. Fix, C.M. Grams, S.L. Gray, H. Grob, S. Groß, M. Hagen, B. Harvey, L. Hirsch, M. Jacob, T. Kölling, H. Konow, C. Lemmerz, O. Lux, L. Magnusson, B. Mayer, M. Mech, R. Moore, J. Pelon, J. Quinting, S. Rahm, M. Rapp, M. Rautenhaus, O. Reitebuch, C.A. Reynolds, H. Sodemann, T. Spengler, G. Vaughan, M. Wendisch, M. Wirth, B. Witschas, K. Wolf, and T. Zinner, 2018: The North Atlantic Waveguide and Downstream Impact Experiment, *Bulletin of the American Meteorological Society*, 99, 1607–1637, <https://doi.org/10.1175/BAMS-D-17-0003.1>.
20. Knudsen, E.M., B. Heinold, S. Dahlke, H. Bozem, S. Crewell, G. Heygster, D. Kunkel, M. Maturilli, M. Mech, A. Rinke, H. Schmithuesen, A. Ehrlich, A. Macke, C. Luepkes, and M. Wendisch, 2018: Synoptic development during the ALOUD/PASCAL field campaign near Svalbard in spring 2017, *Atmospheric Physics and Chemistry*, 18, 17995-18022, <https://doi.org/10.5194/acp-18-17995-2018>.
21. Wahl, S., C. Bollmeyer, S. Crewell, C. Figura, P. Friederichs, A. Hense, J. Keller, and C. Ohlwein, 2017: A novel convective-scale regional reanalysis COSMO-REA2: Improving the representation of precipitation, *Metorologische Zeitschrift*, <https://doi.org/10.1127/metz/2017/0824>.
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23. Neher, I., T. Buchmann, S. Crewell, B. Evers-Dietze, K. Pfeilsticker, B. Pospichal, C. Schirrmeister, and S. Meilinger, 2017: Impact of atmospheric aerosols on daily yields of a polycrystalline PV module using a two-diode model: Scenario for the Sahel zone, *Energy Procedia*, 125, 170-179, <https://doi.org/10.1016/j.egypro.2017.08.168>.
24. Macke, A., P. Seifert, H. Baars, C. Barthlott, C. Beekmans, A. Behrendt, B. Bohn, M. Brück, J. Bühl, S. Crewell, T. Damian, H. Deneke, S. Düsing, A. Foth, P. Di Girolamo, E. Hammann, R. Heinze, A. Hirsikko, J. Kalisch, N. Kalthoff, S. Kinne, M. Kohler, U. Löhnert, B. L. Madhavan, V. Maurer, S. H. Muppa, J. Schween, I. Serikov, H. Siebert, C. Simmer, F. Späth, S. Steinke, K. Träumner, S. Trömel, B. Wehner, A. Wieser, V. Wulfmeyer, X. Xie, 2017: The HD(CP)² Observational Prototype Experiment HOPE – An Overview, *Atmospheric Chemistry and Physics*, 17, 4887-4914, <https://doi.org/10.5194/acp-17-4887-2017>.
25. Ebell, K., U. Löhnert, E. Päschke, E. Orlandi, J. H. Schween, and S. Crewell, 2017: A 1-D variational retrieval of temperature, humidity, and liquid cloud properties: performance under idealized and real conditions, *Journal of Geophysical Research: Atmospheres*, 122, <https://doi.org/10.1002/2016JD025945>.
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Miscellaneous

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Invited Talks (last 5 years)

- 2020 Crewell, S., K. Ebell, A. von Lerber, A. Radovan, B. Kulla, L.-L. Kliesch, M. Mech, A. Rinke, V. Scheumann, M. Wendisch: Arctic Amplification – what can we learn from microwave measurements? Institute seminar, Institut für Physik der Atmosphäre, ETH Zürich, 27 April 2020.
- Crewell, S., K. Ebell, A. von Lerber, A. Radovan, B. Kulla, L.-L. Kliesch, M. Mech, A. Rinke, V. Scheumann, M. Wendisch: Arctic Amplification – what can we learn from microwave measurements? Institute seminar, Institut für Physik der Atmosphäre, DLR Oberpfaffenhofen, 8 Januar 2020.
- 2019 Cloud observations in 2030, Understanding Clouds and Precipitation (UCP2019), Berlin, Germany, 25 February - 1 March 2019
- Arctic clouds - Insights from the ALOUD campaign around Svalbard, Seminar Talk, University Centre in Svalbard/, Longyearbyen, Svalbard, 28 March 2019
- Crewell, S., M. Mech, S. Bühler, P. Eriksson, C. Prigent, X. Xie: The Ice Cloud Imager (ICI) – a new perspective on ice clouds and precipitation, EUMETSAT MTG & EPS-SG User Days, Darmstadt, 14 November 2019.

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- Crewell, S., M. Mech, S. Bühler, P. Eriksson, C. Prigent, X. Xie: Eumetsat Polar System – Second Generation (EPS-SG): Neue Einblicke in Eiswolken, DMG Fortbildung, Bonn, 26 November 2019.
- 2018 Arctic clouds - first insights from the ACLOUD campaign around Svalbard, Colloquium, University of Bremen, 12 January 2018
- The Role of Mixed-Phase Clouds in the Arctic, Seminar Talk, Colorado State University, Fort Collins, 20 April 2018
- Crewell, S., Warum erwärmt sich die Arktis am stärksten – und was haben die Wolken damit zu tun? STUMETA, University of Bonn, 10 May 2018
- Microwave radiometry for atmospheric application: a journey across the world from ground, via aircraft to satellites, Seminar talk, LERMA, Paris, 5 June 2018
- Microwave radiometry - an important component of the global observing system, ARM Summer workshop, Norman, Oklahoma, 20 July 2018
- 2017 Future Campaigns. HD(CP)2 Annual Meeting, Schneefernerhaus, 15 February 2017
- Narval Next-generation aircraft remote-sensing for validation studies, HALO Symposium, Oberpfaffenhofen, 14 March 2017
- Microwave Radiometry and Sensor Synergy, Winter school on the observation and modeling of high - latitude and Arctic clouds, Hyytiälä, Finland, March 19-25, 2017
- Planned HALO/HAMP campaigns + Polar 5/MiRAC, ISMAR Workshop, Eumetsat, Darmstadt, 10 May 2017
- Wasser und Wolkenbildung – Atmosphäre und mögliche Vorhersagen. Wissenschaft im Rathaus, Köln, 9 October 2017
- The AC3 project: why is the Arctic warming faster than the mid latitudes? Svalbard Science Conference, Oslo, 6-9 November 2017
- 2016 What can we learn from atmospheric profiling stations to better understand climate processes? Challenges of Atmospheric Research, DLR Conference on Climate Change, Cologne, 5 - 7 April 2016
- Atmospheric Remote Sensing: Challenges and Applications, 1st ECARS Summer School, Romania, 2 June 2016
- Assessment of sampling effects on precipitable water climatology, GEWEX Water Vapor Assessment (GVAP) Workshop, Eumetsat, Darmstadt, 22 September 2016
- Crewell, S.: Was ist gute Betreuung? Promovierendentag, Universität zu Köln, 2 November 2016
- ArctiC Amplification: Climate Relevant Atmospheric and Surface Processes, and Feedback Mechanisms (AC)3 with a focus on clouds. MISU, University of Stockholm, Seminar talk, 29 November 2016