

CURRICULUM VITAE

PERSONAL DATA

Name: Dr. Stefan Josef Kneifel
Date of Birth: 26th December, 1981
City of Birth: Wolfratshausen, Germany
Nationality: Germany
Address: Nauheimer Str. 13
50969 Cologne, Germany
E-Mail: skneifel@meteo.uni-koeln.de
Researcher ID: A-2044-2015



UNIVERSITY EDUCATION

05/2008 – 11/2011 PhD (Dr. rer. nat.) in Meteorology at the University of Cologne, Germany, Subject: *Characterization of snowfall using ground-based passive and active remote sensors.*
10/2002 – 04/2008 Diploma (equiv. M.S. degree) in Meteorology from the Ludwig-Maximilians-University Munich, Germany, Subject: *Modelling and observation of horizontal water vapor inhomogeneities using microwave radiometry (in german).*

EMPLOYMENT RECORD

since 01/2017 Leader of the Emmy-Noether Young Researcher Group “Optimal combination of Polarimetric and Triple frequency radar techniques for Improving Microphysical process understanding of cold clouds” (OPTIMIce) at the University of Cologne
08/2015 – 12/2016 PostDoc at the Institute of Geophysics and Meteorology, University of Cologne within the HD(CP)² project (BMBF).
05/2011 – 07/2013 PostDoc at the Institute of Geophysics and Meteorology, University of Cologne within the Reanalysis project of the Hans-Ertel Centre for Weather Research, German Weather Service (DWD).
05/2008 – 04/2011 Scientific Assistant at the Institute of Geophysics and Meteorology, University of Cologne within the TOSCA project (DFG).

DR. STEFAN KNEIFEL – CURRICULUM VITAE

- 01/2007 – 03/2008 Student Research Assistant in the field of passive microwave radiometry within the SFB-TR32 (DFG) at the Institute of Meteorology, University of Bonn.
- 11/2004 – 01/2006 Student Research Assistant at the Institute of Meteorology, University of Munich within the DWD project: *HUBOLA – Comparison of humidity data from the ATOVS and SEVIRI systems with ground-based radiosondes, microwave radiometers and GPS measurements.*
- 09/2002 – 10/2002 Working student, Institute for Atmospheric Physics, German Aerospace Center (DLR), Oberpfaffenhofen, Germany: *Development of an electric field mill for observing the atmospheric electric field of thunderstorms.*
- 06/2002 – 07/2002 Voluntary Internship, German Weather Service (DWD), Hohenpeißenberg Observatory, project: VERTICATOR.
- 06/2001 – 04/2002 Alternative civilian service, Bavarian Nature Conservation Association (Bund Naturschutz in Bayern e.V.)

INTERNATIONAL EXPERIENCE

- 09/2013 – 02/2015 PostDoc fellowship from the German Academic Exchange Service (DAAD), with Prof. Kollias, McGill University, Montreal, Canada. Subject: *Development of advanced multi- and high frequency cloud radar techniques for a better process understanding of clouds and precipitation microphysics.*
- 12/2010 – 01/2011 Stay at the Belgian Princess Elisabeth Antarctic station, Soer Rondane Mountains, East Antarctica, within the HYDRANT project, (BELSPO, Prof. van Lipzig).
- 09/2010 – 11/2010 Visiting scientist at the University of Wisconsin, Madison, with Prof. Bennartz. *Work on multi-frequency radar methods for remote sensing of snowfall.*
- 04/2006 – 09/2006 Scientific Assistant at the University of Bergen, Norway, with Prof. Reuder. *Development of sensors and a data acquisition system for the observation of wind, temperature and humidity using small unmanned airplanes.*

TEACHING EXPERIENCE

- *Full-term Lecturer at McGill University, Montreal, Canada*
 - ATOC-309 "Weather Radars and Satellites" (winter term 2014)
- *Teaching Assistant, Institute of Geophysics and Meteorology, University of Cologne*
 - Tutorial courses for Master students in Radiation, Clouds, Precipitation (WS 2011/2012)

- Supervision of Laboratory courses for undergraduate Meteorology students (SS2009, SS2011)
- Supervision of Field Practical Courses for graduate Meteorology students (SS 2012)

MEMBERSHIPS IN SCIENTIFIC SOCIETIES

- Deutsche Meteorologische Gesellschaft (DMG)
- American Meteorological Society (AMS)
- Deutsche Physikalische Gesellschaft (DPG)

REVIEWER FOR INTERNATIONAL JOURNALS AND RESEARCH ORGANIZATIONS

- Bulletin of the American Meteorological Society
- Journal of Atmospheric and Oceanic Technology
- Journal of Applied Meteorology and Climatology
- Journal of Geophysical Research - Atmospheres
- Geophysical Research Letters
- Quarterly Journal of the Royal Meteorological Society
- Meteorologische Zeitschrift
- Atmospheric Chemistry and Physics
- Progress in Electromagnetic Research
- Atmospheric Science Letters
- U. K. Natural Environmental Research Council (NERC)
- Swiss Science Foundation (SNF)

AWARDS

2016	Young Researcher “Emmy-Noether” Grant from the German Research Foundation to establish own working group (5 yrs duration)
2015	Return Fellowship (6 months) from the German Academic Exchange Service (DAAD)
2013	PostDoctoral Fellowship (18 months) from the German Academic Exchange Service (DAAD).
2012	Young Academic Award from the Geoverbund Aachen-Bonn-Köln-Jülich (ABC/J), Germany.

DR. STEFAN KNEIFEL – CURRICULUM VITAE

- 2008 Best Poster Award, *10th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment*, Florence, Italy.
- 2002 5th place at the National German Youth Research Competition “Jugend forscht”, Subject: *Measurement of the quasi-static atmospheric electric field with a self-developed electric field mill.*

List of Publications

A: Peer-reviewed Articles

Under Review

1. Kuchler, N., **S. Kneifel**, U. Löhnert, P. Kollias, H. Czekala, and T. Rose: A W-band radar-radiometer system for accurate and continuous monitoring of clouds and precipitation, *J. Atmos. Oceanic Tech.*, submitted January 2017.
2. Acquistapace, C., **S. Kneifel**, U. Löhnert, P. Kollias, M. Maahn, and M. Bauer-Pfundstein: Optimizing observations of drizzle onset with millimeter-wavelength radars, *Atmos. Meas. Tech.*, submitted September 2016.
3. Hogan, R. J., R. Honeyager, J. Tyynelä and **S. Kneifel**: Calculating the millimetre-wave scattering phase function of snowflakes using the Self-Similar Rayleigh-Gans Approximation, *Q. J. R. Meteorol. Soc.*, accepted November 2016.
4. Heinze, R., A. Dipankar, C.C. Henken, C. Moseley, O. Sourdeval, S. Tromel, X. Xie, P. Adamidis, F. Ament, H. Baars, C. Barthlott, A. Behrendt, U. Blahak, S. Bley, S. Brdar, M. Brueck, S. Crewell, H. Deneke, P. Di Girolamo, R. Evaristo, J. Fischer, C. Frank, P. Friederichs, T. Gocke, K. Gorges, L. Hande, M. Hanke, A. Hansen, H-C. Hege, C. Hoose, T. Jahns, N. Kalthoff, D. Klocke, **S. Kneifel**, P. Knippertz, A. Kuhn, T. van Laar, A. Macke, V. Maurer, B. Mayer, C. I. Meyer, S. K. Muppa, R. A. J. Neggers, E. Orlandi, F. Pantillon, B. Pospichal, N. Rober, L. Scheck, A. Seifert, P. Seifert, F. Senf, P. Siligam, C. Simmer, S. Steinke, B. Stevens, K. Wapler, M. Weniger, V. Wulfmeyer, G. Zängl, D. Zhang, and J. Quaas: Large-eddy simulations over Germany using ICON: A comprehensive evaluation, *Q. J. Roy. Meteor. Soc.*, accepted 17. October 2016.
5. Trömel, S., A. V. Ryzhkov, M. Diederich, K. Mühlbauer, C. Simmer, **S. Kneifel**, and J. Snyder, 2016: Multisensor Characterization of Mammatus Clouds, *Mon. Wea. Rev.*, accepted, doi:10.1175/MWR-D-16-0187.1.

2016

6. De Angelis, F., D. Cimini, J. Hocking, P. Martinet, and **S. Kneifel**, 2016: RTTOV-gb - Adapting the fast radiative transfer model RTTOV for the assimilation of ground-based microwave radiometer observations, *Geosci. Model Dev.*, 9, 2721-2739, doi:10.5194/gmd-9-2721-2016.
7. **Kneifel S.**, P. Kollias, A. Battaglia, J. Leinonen, M. Maahn, H. Kalesse, and F. Tridon: First Observations of Triple Frequency Radar Doppler Spectra in Snowfall, 2016: Interpretation and Applications, *Geophys. Res. Lett.*, 43, 2225–2233, doi: 10.1002/2015GL067618.

8. Kalesse, H., W. Szyrmer, **S. Kneifel**, P. Kollias, and E. Luke, 2016: Fingerprints of a riming event on cloud radar Doppler spectra: observations and modeling, *Atmos. Chem. Phys.*, 16, 2997-3012, doi:10.5194/acp-16-2997-2016.
9. Turner, D. D., **S. Kneifel**, and M. P. Cadetdu, 2016: An Improved Liquid Water Absorption Model in the Microwave for Supercooled Liquid Water Clouds, *J. Atmos. Oceanic Tech.*, 33, 33-44, doi: 10.1175/JTECH-D-15-0074.1.

2015

10. **Kneifel S.**, A. von Lerber, J. Tiira, D. Moisseev, P. Kollias, and J. Leinonen, 2015: Observed Relations between Snowfall Microphysics and Triple-frequency Radar Measurements, *J. Geophys. Res.*, 120, 6034-6055, doi: 10.1002/2015JD023156.
11. Gorodetskaya, I. V., **S. Kneifel**, M. Maahn, K. Van Tricht, W. Thiery, J. H. Schween, A. Mangold, S. Crewell, and N. P. M. Van Lipzig, 2015: Cloud and precipitation properties from ground-based remote-sensing instruments in East Antarctica, *The Cryosphere*, 9, 285-304, doi:10.5194/tc-9-285-2015.
12. Bollmeyer, C., J. Keller, C. Ohlwein, S. Bentzien, S. Crewell, P. Friedrichs, A. Hense, J. Keune, **S. Kneifel**, I. Pscheidt, S. Redl, and S. Steinke, 2015: Towards a high-resolution regional reanalysis for the European CORDEX domain, *Q. J. R. Meteorol. Soc.*, 141, 1–15, doi:10.1002/qj.2486.

2014

13. Maahn M., C. Burgard, S. Crewell, I. V. Gorodetskaya, **S. Kneifel**, S. Lhermitte, K. Van Tricht, and N. P. M. Van Lipzig, 2014: How does the space-borne radar blind-zone affect derived surface snowfall statistics in polar regions?, *J. Geophys. Res.*, 119, 13604–13620, doi:10.1002/2014JD022079
14. **Kneifel, S.**, S. Redl, E. Orlandi, U. Löhnert, M. P. Cadetdu, D. D. Turner, and M-T. Chen, 2014: Absorption Properties of Supercooled Liquid Water between 31 and 225 GHz: Evaluation of Absorption Models Using Ground-based Observations, *J. Appl. Meteor. Climatol.*, 53, 1028-1045, doi:10.1175/JAMC-D-13-0214.1
15. Battaglia, A., C. D. Westbrook, **S. Kneifel**, P. Kollias, N. Humpage, U. Löhnert., J. Tyynelä, and G. W. Petty, 2014: G-band atmospheric radars: new frontiers in cloud physics, *Atmos. Meas. Tech.*, 7, 1527-1546, doi:10.5194/amt-7-1527-2014.
16. Kulie, M. S., M. J. Hiley, R. Bennartz, **S. Kneifel**, and S. Tanelli, 2014: Triple frequency radar reflectivity signatures of snow: Observations and comparisons to theoretical ice particle scattering models, *J. Appl. Meteor. Climatol.*, 53, 1080–1098, doi:10.1175/JAMC-D-13-066.1.

2012

17. Leinonen, J., **S. Kneifel**, D. Moisseev, J. Tyynelä, S. Tanelli, and T. Nousiainen, 2012: Evidence of nonspheroidal behavior in millimeter-wavelength radar observations of snowfall, *J. Geophys. Res.*, 117, D18205, doi:10.1029/2012JD017680.
18. Xie, X., U. Löhnert, **S. Kneifel**, and S. Crewell, 2012: Snow particle orientation observed by ground-based microwave radiometry, *J. Geophys. Res.*, 117, D02206, doi:10.1029/2011JD016369.

2011

19. **Kneifel, S.**, M. Maahn, G. Peters and C. Simmer, 2011: Observation of snowfall with a low-power FM-CW K-band radar (Micro Rain Radar), *Meteorol. Atmos. Phys.*, 113, 75-87. doi:10.1007/s00703-011-0142-z.
20. **Kneifel, S.**, M. S. Kulie, and R. Bennartz, 2011: A triple-frequency approach to retrieve microphysical snowfall parameters, *J. Geophys. Res.*, 116, D11203, doi:10.1029/2010JD015430.
21. Löhnert, U., **S. Kneifel**, A. Battaglia, M. Hagen, L. Hirsch, and S. Crewell, 2011: A multi-sensor approach towards a better understanding of snowfall microphysics: The TOSCA project, *Bull. Amer. Meteor. Soc.*, 92, 613–628, doi: 10.1175/2010BAMS2909.1.

2010

22. **Kneifel, S.**, U. Löhnert, A. Battaglia, S. Crewell, and D. Siebler, 2010: Snow scattering signals in ground-based passive microwave measurements. *J. Geophys. Res.*, 115, D16214, doi:10.1029/2010JD013856.

2009

23. **Kneifel, S.**, S. Crewell, U. Löhnert and J. Schween, 2009: Investigating water vapor variability by groundbased microwave radiometry: Evaluation using airborne observations, *IEEE Geoscience and Remote Sensing Letters*, 6, 157-161, doi.10.1109/LGRS.2008.2007659.

B: Conference Contributions and Technical Reports**Conference Proceedings (peer-reviewed)**

Kneifel, S., S. Crewell, S. Redl, S. Steinke, C. Ohlwein, J. Keller, P. Friederichs, A. Hense, C. Wosnitza, and I. Pscheidt, 2012: Retrospective analysis of regional climate: The German reanalysis project - potential of remote sensing observations, *Proceedings of the International Geoscience and Remote Sensing Symposium*, July 22-27, 2012, Munich, Germany, 3689-3692, doi: 10.1109/IGARSS.2012.6350615.

Extended Abstracts

Maahn, M., P. Kollias, **S. Kneifel**, I. Gorodetskaya, G. Peters and C. Simmer: Measuring snow with a low-power K-band radar (Micro Rain Radar) at high latitudes. *European Radar Conference (ERAD)*, 25-29 June 2012, Toulouse, France, 5 pp.

Kneifel, S., U. Löhnert, L. Hirsch, A. Battaglia, S. Crewell, and D. Siebler: Ground-based remote sensing of snowfall through active and passive sensor synergy, *8th International Symposium on Tropospheric Profiling: Needs and Technologies (ISTP)*, 18-23 October, 2009, Delft, The Netherlands, 3 pp.

Technical Reports

Gorodetskaya, I., N. P. M. van Lipzig., M. R. van den Broeke, W. Boot, C. Reijmer, A. Mangold, **S. Kneifel**, S. Crewell, and J. Schween: Ground-based observations of cloud properties, precipitation and meteorological conditions at Princess Elisabeth station in Dronning Maud Land, Antarctica, *BPRC Technical Report 2010-01, 5th Antarctic Meteorological Observation, Modeling, and Forecasting Workshop*, The Ohio State University, Columbus, Ohio, USA, 12-14 July 2010.

Kneifel, S.: Comparison of humidity data from the ATOVS and SEVIRI system with ground-based radiosonde, microwave radiometer and GPS measurements. Final Report for the Satellite Application Facility on Climate Monitoring (CM SAF), Meteorological Institute, University of Munich, Germany, 25 November 2005.