

Curriculum Vitae

1. Personal Data

Name: Ulrike Lohmann, Full Professor
Address: ETH Zurich
Institute for Atmospheric and Climate Science
Universitaetsstr. 16
8092 Zurich, Switzerland
Phone: +41 44 633 0514
E-mail: ulrike.lohmann@env.ethz.ch
webpage: <https://iac.ethz.ch/group/atmospheric-physics.html>

2. Professional Appointments

Oct 2004 - present	Full Professor in Atmospheric Physics, Institute for Atmospheric and Climate Science, ETH Zurich, Switzerland
Dec 2021 - present	Associate Member in the Department of Physics, ETH Zurich
Aug 2017 - Dec 2017	Visiting Scientist at the Meteorological Institute of Stockholm University, Sweden
Oct 2006 - Sep 2014	Chair of the Institute for Atmospheric and Climate Science, ETH Zurich
Jul 2005 - Jun 2011	Adjunct Professor, Department of Physics and Atmospheric Science, Dalhousie University, Halifax, Canada
Sep 2010 - Dec 2010	Visiting Scientist at the Max Planck Institute for Meteorology, Hamburg, Germany
Jul 2001 - Sep 2004	Associate Professor in Atmospheric Science at Dalhousie University, Halifax, Canada
Jan 2002 - Sep 2004	Canada Research Chair Tier II in Atmospheric Processes and Climate at Dalhousie University
Mar 2004 - May 2004	Visiting Scientist at the Max Planck Institute for Meteorology, Hamburg, Germany
Sep 2003 - Dec 2003	Visiting Professor at University of Toronto, Department of Physics
Apr 2001 - Jun 2003	Adjunct Professor in Lamont-Doherty Earth Observatory, Columbia University, New York
Apr 2000 - Jun 2003	Coordinator of the Atmospheric Science Programme at Dalhousie University
Sep 1997 - Jun 2001	Assistant Professor in Atmospheric Science at Dalhousie University, Joint appointment in Physics (75%) and Oceanography (25%)
Sep 1997 - Jul 1999	Junior NSERC Industrial Research Chair at Dalhousie University
Oct 1996 - Aug 1997	NSERC Postdoctoral fellow at the Canadian Centre for Climate Modelling and Analysis, Victoria, B.C., Canada
1996	Doctorate in Meteorology from the Max Planck Institute for Meteorology in Hamburg/Hamburg University

3. Grants

3.1. Awards and recognitions

1. ERC advanced grant, 2021
2. Doctorate of Philosophy honoris causa from Stockholm University, Sept 28, 2018
3. Highly cited researcher by Clarivate Analytics 2014-2018 defined as the top 1% cited papers published in the preceding 10 year-period
4. Peter Hobbs memorial lecture, University of Washington, Seattle: “Uncertainties in climate prediction: The influence of clouds and aerosols on climate”, Jan 21, 2016
5. Bert Bolin lecture, University of Stockholm, Sweden: “Uncertainties in climate prediction related to clouds and aerosols”, May 27, 2015
6. Jule Charney lecture at the AGU fall meeting, 2014, San Francisco, Dec 16, 2014
7. Elected member of Leopoldina, the German national academy of science (2014)
8. Golden Tricycle Award (2013): Award for family-friendly supervisors from ETH Zurich
9. Ocean and Atmospheric Research Outstanding Scientific Paper Award (2008): “Technical Summary, in Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of IPCC, Cambridge Univ. Press, 74 pp., 2007”.
10. AGU Fellow (2008): “For her leadership in climate change research through merging aerosols with liquid, ice and mixed-phase clouds in global climate models”
11. Nobel Peace Prize for IPCC (2007)
12. AMS Henry G. Houghton Award (2007): “For pioneering contributions to the representation and quantification of the effects of cloud-aerosol interactions on climate”
13. Distinguished Lecture Series Award Goddard Space Flight Center (2004)
14. 2003 Editors’ Citation for Excellence in Refereeing for Geophysical Research Letters
15. Killam Prize from Dalhousie University (2003)
16. Canada Research Chair (2002-2004)
17. Petro Canada Young Innovator Award (1998)
18. NSERC postdoctoral fellowship (1996-1997)

4. Current externally funded research projects

Investigator	Funding agency and title	year	Our share
Lohmann	ERC advanced grant: “Using clouds as a natural laboratory to improve precipitation forecast skills”	2021-2026	3’499’926 EUR
Brunner, Lohmann et al.	PASC project: “HAMAM - HAM and ART Acceleration for Many-Core Architecture”	2021-2024	
Sausen, Lohmann et al.	EU research project: “Advancing the Science for Aviation and ClimAte (ACACIA)”	2020-2024	300’500 EUR
Stier, Lohmann et al.	Marie Skłodowska-Curie Innovative Training Networks (ITN): “innovative MachIne leaRning to constrain Aerosol-cloud CLimate Impacts (iMIRACLI)”	2020-2024	493’433 EUR
Ekman, Lohmann et al.	EU research project: “Constrained aerosol forcing for improved climate projections (FORCeS)”	2019-2024	592’125 EUR
Lohmann	Baloise insurance: “Cloud seeding simulations for hail prevention over Switzerland”	2019-2023	306’795 CHF

5. Professional Contributions

5.1. Current Professional Contributions

1. At ETH Zurich:
 - (a) Vice Rector for Doctoral Studies, Feb 2023 - present
 - (b) Elected Member of the Lecturers' Conference, 2016 - present
 - (c) Delegate of the ETH president for heading search committees, 2010 - present
2. Elsewhere:
 - (a) Stiftungsrat im Swiss University Sports, Jan 2022 - present
 - (b) Member of the American Geophysical Union, American Meteorological Society, European Geophysical Society, German Meteorological Society, Swiss Meteorological Society
 - (c) Convener or co-convener at several international conferences and workshops

5.2. Past Professional Contributions in the last 5 years

1. Vice President of division II of the Swiss National Science Foundation (SNSF) research council, Oct 2020 - Sept 2022
2. President of the Lecturers' Conference, Aug 2020 - July 2022
3. Member of rETHink workstream 6, March 2020 - Oct 2021
4. Member of the External Science Advisory Group of the Bolin Centre, Stockholm University, Jan 2020 - Jan 2023
5. Member of the SNSF research council, Oct 2018 - Sept 2022
6. Vice President of the Lecturers' Conference, Aug 2018 - Jul 2020
7. Mentor for the Helmholtz-Mentoring Programm, 2015 - 2019
8. Member of the AGU Atmospheric Science fellow selection committee, 2015 - 2019
9. Member of the scientific steering committee of the German weather service, June 2015 - 2019
10. Didactic fellow for peer review in teaching, 2015 - 2018
11. Member of the ETH+ committee, 2018
12. Editor for ACP for the special session on geoengineering, 2014 - 2018
13. Member of the ETH research council, 2013 - 2018
14. Coordinator of the EU FP7 project BACCHUS, Dec 2013 - Jul 2018
15. Chair of the HAMMOZ steering committee, Nov 2009 - Apr 2018
16. External reviewer for the following PhD theses: Hauke Schulz at MPI Hamburg (2021), Jacob Schacht and Diego Villanueva in Leipzig (2021)

6. Invited Talks in the last 5 years

6.1. Conferences

1. General Assembly of the European Geophysical Union (EGU), Vienna: "Investigating ice crystal formation and growth in wintertime stratus clouds over the Swiss Plateau (CLOUDLAB project)", April, 2023
2. GAW/CGOS Symposium, Bern: "Orographic mixed-phase clouds - observations and modelling", Sept 14, 2021

3. 24th ETH nanoparticle conference, online: “Future warming exacerbated by aged-soot effect on cloud formation”, June 24, 2021
4. Annual meeting of the American Meteorological Society, online: “Can Cirrus Cloud Seeding Noticeably Counteract Global Warming?”, Jan 15, 2021
5. Symposium on size selected clusters (S3C), Davos: “New evidence of soot particles affecting past and future cloud formation and climate”, Feb 24, 2020
6. International Symposium on Ultrafine Particles - Air Quality and Climate, Brussels, Belgium: “The role of black carbon in cloud formation and climate”, May 15, 2019
7. Annual meeting of the American Meteorological Society, Phoenix, Arizona: “Orographic mixed-phase clouds“, Jan 9, 2019
8. UK Atmospheric Science Conference, York, England: “Aerosol-Cloud Interactions in Mixed-Phase Clouds and their Role for Climate”, July 4, 2018

6.2. Workshops

1. Heraeus seminar on aerosols, health and climate: gigacity and future, Bad Honnef: “Aerosol impact on climate via warm and mixed-phase clouds”, March 22, 2023
2. Swiss Meteorological Society Meeting, ETH Zurich: “Weather modifications”, Nov 4, 2021
3. PAGES Early Career Researchers Event, University of Bern: “Climate change in polar regions”, Dec 18, 2018

6.3. Seminars

1. PSI particle physics group: “Clouds - their formation and importance for climate”, March 30, 2023
2. University of Oslo: “Mixed-phase clouds: Insights from observations and modelling”, Nov 24, 2022
3. University of Bern: “Orographic mixed-phase clouds from cloud remote sensing, in-situ observations and modelling”, April 8, 2022
4. University of Vienna: “Geoengineering as a way out of the climate crisis?”, March 25, 2022
5. SwissRe: “Clouds and geoengineering”, Feb 17, 2022
6. Ludwig-Maximilian University Munich: “Mixed-phase clouds from observations and modelling: the role of the seeder-feeder process and secondary ice formation”, January 25, 2022
7. Peking University: “The influence of clouds and aerosols on climate”, Oct 11, 2021
8. Karlsruhe Institute for Technology: “Mixed-phase clouds from observations and modelling: the role of the seeder-feeder process and secondary ice formation”, July 20, 2021
9. CalTech: “Future warming exacerbated by aged-soot effect on cloud formation”, Jan 24, 2021
10. Harvard University: “Cirrus seeding: Understanding the complicated little sister of stratospheric geoengineering”, Oct 17, 2019
11. MeteoSwiss Locarno: “Aerosol-cloud-precipitation interactions in mixed-phase clouds”, June 11, 2019
12. University of Oslo: “Ice formation in the atmosphere - how does it work and why does it matter?”, Mar 14, 2019
13. DLR, Munich: “Simulations of and experiments relevant for cirrus clouds”, Nov 19, 2018.
14. Physics Colloquium of the University of Heidelberg, Germany: “Ice formation in the atmosphere - how does it work and why does it matter?”, Oct 19, 2018

7. Supervision of Ph.D. Students and Research Associates in the last 5 years

7.1. Post-doctoral Fellows / Research Associates

1. Minjie Zheng, June 2022-present: Radionucleides in ECHAM-HAM
2. Diego Villanueva, June 2022-present: Climate intervention of mixed-phase clouds
3. Jie Cheng, Sept 2021-present: Baloise INP tests and HINC-Auto
4. Yu Wang, Sept 2021-present: effect of co-condensation in a global model
5. Robert Spirig, Sept 2021-present: remote sensing of high fog during CLOUDLAB
6. Nadia Shardt, Jan 2020-Dec 2022: INP studies using a microfluidic device
7. Carolin Rösch, Mar 2018-Dec 2020: INP studies
8. Alexander Beck, Sep 2017-Nov 2018: Holography
9. Monika Burkert, Jul 2016-Jun 2018: BACCHUS project manager
10. Mikhail Paramonov, Nov 2015-Oct 2018: INP studies
11. Jan Henneberger, Jul 2013-present: Head of the holography group
12. Zamin Kanji, Aug 2009-Oct 2012 and since Nov 2013: Ice nucleation studies
13. David Neubauer, Oct 2012-present: Warm clouds in ECHAM
14. Amewu Mensah, Jan 2011-July 2019: Soot measurements with the SP2 instrument

7.2. Doctoral Students

1. Huiying Zhang, Nov 2021-present: Machine-learning analysis of holographic data
2. Mayur Sapkal, Oct 2021-present: ORACLES project
3. Christopher Fuchs, Sept 2021-present: Holographic measurements during CLOUDLAB
4. Anna Miller, Sept 2021-present: Seeding AgI from dones in CLOUDLAB
5. Nadja Omanovic, Sept 2021-present: Detailed CLOUDLAB simulations or high fog
6. Judith Kleinheins, Feb 2021-present: Importance of co-condensation of organic vapors for aerosol properties
7. Nikolaos Papaevangelou, Feb 2021-present: Cloud seeding for hail prevention
8. Emilie Fons, Sept 2020-present: detection bias for aerosol-cloud interactions
9. Kai Jeggle, Sept 2020-present: aerosol signal in cirrus clouds
10. Ulrike Proske, Jun 2020-present: Simplification of the aerosol and cloud microphysics in ICON
11. Guangyu Li, April 2019-March 2023: INP measurements in the Arctic
12. Colin Tully, Feb 2019-Dec 2022: Climate intervention using cirrus thinning
13. Julie Pasquier, Sept 2018-Dec 2021: Arctic mixed-phase clouds
14. Cyril Brunner, June 2018-Jul 2021: HINC automatisation
15. Jörg Wieder, April 2018-March 2022: Field measurements of aerosols and precipitation
16. Zane Dedekind, Feb 2018-Jul 2021: Orographic Mixed-phase Clouds in the Swiss Alps
17. Bernhard Enz, Oct 2017-Dec 2022: Hurricanes in ICON: impact of resolution, shear and dust
18. Annika Lauber, Apr 2017-Dec 2020: Detecting ice multiplication in mixed-phase clouds using digital holography
19. Gesa Eirund, Aug 2016-Dec 2019: Regional simulations of orographic mixed-phase clouds
20. Fabiola Ramelli, Aug 2016-April 2020: Development of a mobile platform for mixed-phase cloud observations
21. Franz Friebel, Jun 2016-May 2019: Is soot a good CCN?
22. Steffen Münch, Jan 2016-April 2020: Geoengineering involving cirrus clouds

23. Fabian Mahrt, Sep 2015-April 2019: Can pre-activation of soot increase its ice nucleation potential?
24. Anina Gilgen, Sep 2015-Dec 2018: Aerosol-cloud interactions: from the future to the past
25. Robert David, Jul 2015-Sept 2018: Is deposition nucleation in reality ice nucleation in pores?
26. Remo Dietlicher, Jan 2015-Jul 2018: Improving ice cloud microphysics in ECHAM
27. Katty Huang, Nov 2014-Jun 2018: Aerosols in the future Arctic and their impacts on climate

8. Lectures Taught in the last 5 years

8.1. Courses Taught at ETH

1. Numerical Modelling of Weather and Climate (for MSc and PhD students), 2007-2018 (~ 20-50 students) - jointly with Christoph Schär
2. Cloud Dynamics: Hurricanes (for MSc and PhD students), every spring term since 2006 (~ 20-40 students)
3. Cloud Microphysics (for MSc and PhD students), every fall term since 2005 (~ 20-30 students, since 2015 in a new format in 2 groups with max. 10 students)
4. Atmospheric Physics (3rd year BSc students), every fall term since 2005 (~ 30-50 students)
5. Guest lecture in Fachdidaktik Umweltlehre on climate change, every other year since 2008
6. Guest lecture in Klimasysteme (2nd year BSc students), Spring term since 2008: “Aerosole und Wolken”

8.2. Courses Taught Elsewhere

1. Lecture at eScience fall school in Tjärnö, Sweden, Nov 2022
2. 2 lectures at the iMIRACLI fall school in Stockholm, Sweden, Sept 2022
3. Online lectures at the FORCeS fall school, Nov 2020 and Nov 2021
4. Online lecture at the iMIRACLI fall school, Sept 2020
5. Lecture at the NCCR climate engineering summer school in Ascona, September 2019

9. Publications

ResearcherID: B-6153-2009, ORCID ID: 0000-0001-8885-3785: **n=312, 25'263 citations (23'384 without self citations), h-index 73**, 22.12.2022, Web of Science Core Collection without conference proceedings. For a full list of references from my group see: www.iac.ethz.ch/groups/lohmann/publications.

9.1. Peer Reviewed Publications

1. Dedekind, Z., Grazioli, J., Austin, P. H., and Lohmann, U.: Heavy snowfall event over the Swiss Alps: did wind shear impact secondary ice production?, *Atmos. Chem. Phys.*, *23*, 2345–2364, doi.org/10.5194/acp-23-2345-2023, 2023.
2. Enz, B. M., D. Neubauer, M. Sprenger, and U. Lohmann: The Dynamical Tropopause Location as a Potential Predictor for North Atlantic Tropical Cyclone Activity. *J. Climate*, *36*, 2515–2533, doi.org/10.1175/JCLI-D-22-0479.1, 2023.

3. Pasquier, J. T., Henneberger, J., Korolev, A., Ramelli, F., Wieder, J., Lauber, A., Li, G., David, R. O., Carlsen, T., Gierens, R., Maturilli, M. and Lohmann, U.: Understanding the history of two complex ice crystal habits deduced from a holographic imager. *Geophys. Res. Lett.*, *50*, e2022GL100247. doi.org/10.1029/2022GL100247, 2023.
4. Chen, Y., Haywood, J., Wang, Y., Malavelle, F., Jordan, G., Partridge, D., Fieldsend, J., De Leeuw, J., Schmidt, A., Cho, N., Oreopoulos, L., Platnick, S., Grosvenor, D., Field, P. and Lohmann, U.: Machine learning reveals climate forcing from aerosols is dominated by increased cloud cover. *Nature Geosci.* *15*, 609-614, doi.org/10.1038/s41561-022-00991-6, 2022.
5. Eirund, G.K., Drossaert van Dusseldorp, S., Brem, B.T., Dedekind, Z., Karrer, Y., Stoll, M., and Lohmann, U., Aerosol–cloud–precipitation interactions during a Saharan dust event – A summertime case-study from the Alps. *Q. J. R. Meteorol. Soc.*, 1– 19, doi.org/10.1002/qj.4240, 2022.
6. Isenrich, F. N., Shardt, N., Rösch, M., Nette, J., Stavrakis, S., Marcolli, C., Kanji, Z. A., deMello, A. J., and Lohmann, U.: The Microfluidic Ice Nuclei Counter Zürich (MINCZ): a platform for homogeneous and heterogeneous ice nucleation, *Atmos. Meas. Tech.*, *15*, 5367–5381, doi.org/10.5194/amt-15-5367-2022, 2022.
7. Kelesidis, G. A., D. Neubauer, L.-S. Fan, U. Lohmann, and S. E. Pratsinis: Enhanced Light Absorption and Radiative Forcing by Black Carbon Agglomerates, *Environ. Sci. Technol.* *56*, 8610-8618, doi:10.1021/acs.est.2c00428, 2022.
8. Pasquier, J. T., David, R. O., Freitas, G., Gierens, R., Gramlich, Y., Haslett, S., Li, G. and Schäfer, B., Siegel, K., Wieder, J., Adachi, K., Belosi, F., Carlsen, T., Decesari, S., Ebell, K., Gilardoni, S., Gysel-Beer, M., Henneberger, J., Inoue, J., Kanji, Z. A., Koike, M., Kondo, Y., Krejci, R., Lohmann, U., Maturilli, M., Mazzolla, M., Modini, R., Mohr, C., Motos, G., Nenes, A., Nicosia, A., Ohata, S., Paglione, M., Park, S., Pileci, R. E., Ramelli, F., Rinaldi, M., Ritter, C., Sato, K., Storelvmo, T., Tobo, Y., Traversi, R., Viola, A. and P. Zieger: The Ny-Ålesund Aerosol Cloud Experiment (NASCENT): Overview and First Results, *Bull. Amer. Meteor. Soc.* *103*, E2533-E2558, doi.org/10.1175/BAMS-D-21-0034.1, 2022.
9. Pasquier, J. T., Henneberger, J., Ramelli, F., Lauber, A., David, R. O., Wieder, J., Carlsen, T., Gierens, R., Maturilli, M., and Lohmann, U.: Conditions favorable for secondary ice production in Arctic mixed-phase clouds, *Atmos. Chem. Phys.*, *22*, 15579–15601, doi.org/10.5194/acp-22-15579-2022, 2022.
10. Proske, U., Ferrachat, S., Neubauer, D., Staab, M., and Lohmann, U.: Assessing the potential for simplification in global climate model cloud microphysics, *Atmos. Chem. Phys.*, *22*, 4737–4762, doi.org/10.5194/acp-22-4737-2022, 2022.
11. Salzmann, M., Ferrachat, S., Tully, C., Münch, S., Watson-Parris, D., Neubauer, D., Siegenthaler-Le Drian, C., Rast, S., Heinold, B., Crueger, T., Brokopf, R., Mülmenstädt, J., Quaas, J., Wan, H., Zhang, K., Lohmann, U., Stier, P., Tegen, I., The global atmosphere-aerosol model ICON-A-HAM2.3 – Initial model evaluation and effects of radiation balance tuning on aerosol optical thickness. *J. Adv. Model. Earth Sys.*, *14*, e2021MS002699. doi.org/10.1029/2021MS002699, 2022.
12. Tully, C., Neubauer, D., Omanovic, N., and Lohmann, U.: Cirrus cloud thinning using a more physically based ice microphysics scheme in the ECHAM-HAM general circulation model, *Atmos. Chem. Phys.*, *22*, 11455–11484, doi.org/10.5194/acp-22-11455-2022, 2022.
13. Villanueva, D., A. Possner, D. Neubauer, B. Gasparini, U. Lohmann and M. Tesche: Mixed-phase regime cloud thinning could help restore sea ice. *Environ. Res. Lett.* *17*, 114057, 2022.

14. Wieder, J., Mignani, C., Schär, M., Roth, L., Sprenger, M., Henneberger, J., Lohmann, U., Brunner, C., and Kanji, Z. A.: Unveiling atmospheric transport and mixing mechanisms of ice-nucleating particles over the Alps, *Atmos. Chem. Phys.*, *22*, 3111–3130, doi.org/10.5194/acp-22-3111-2022, 2022.
15. Wieder, J., Ihn, N., Mignani, C., Haarig, M., Bühl, J., Seifert, P., Engelmann, R., Ramelli, F., Kanji, Z. A., Lohmann, U., and Henneberger, J.: Retrieving ice-nucleating particle concentration and ice multiplication factors using active remote sensing validated by in situ observations, *Atmos. Chem. Phys.*, *22*, 9767–9797, doi.org/10.5194/acp-22-9767-2022, 2022.
16. Dedekind, Z., Lauber, A., Ferrachat, S., and Lohmann, U.: Sensitivity of precipitation formation to secondary ice production in winter orographic mixed-phase clouds, *Atmos. Chem. Phys.*, *21*, 15115–15134, doi.org/10.5194/acp-21-15115-2021, 2021.
17. Georgakaki, P., Bougiatioti, A., Wieder, J., Mignani, C., Ramelli, F., Kanji, Z. A., Henneberger, J., Hervo, M., Berne, A., Lohmann, U., and Nenes, A.: On the drivers of droplet variability in alpine mixed-phase clouds, *Atmos. Chem. Phys.*, *21*, 10993–11012, doi.org/10.5194/acp-21-10993-2021, 2021.
18. Lauber, A., Henneberger, J., Mignani, C., Ramelli, F., Pasquier, J. T., Wieder, J., Hervo, M., and Lohmann, U.: Continuous secondary-ice production initiated by updrafts through the melting layer in mountainous regions, *Atmos. Chem. Phys.*, *21*, 3855–3870, doi.org/10.5194/acp-21-3855-2021, 2021.
19. Pelucchi, P., Neubauer, D., and Lohmann, U.: Vertical grid refinement for stratocumulus clouds in the radiation scheme of the global climate model ECHAM6.3-HAM2.3-P3, *Geosci. Model Dev.*, *14*, 5413–5434, doi.org/10.5194/gmd-14-5413-2021, 2021.
20. Proske, U., Bessenbacher, V., Dedekind, Z., Lohmann, U., and Neubauer, D.: How frequent is natural cloud seeding from ice cloud layers ($< -35^{\circ}\text{C}$) over Switzerland?, *Atmos. Chem. Phys.*, *21*, 5195–5216, doi.org/10.5194/acp-21-5195-2021, 2021.
21. Ramelli, F., Henneberger, J., David, R. O., Lauber, A., Pasquier, J. T., Wieder, J., Bühl, J., Seifert, P., Engelmann, R., Hervo, M., and Lohmann, U.: Influence of low-level blocking and turbulence on the microphysics of a mixed-phase cloud in an inner-Alpine valley, *Atmos. Chem. Phys.*, *21*, 5151–5172, doi.org/10.5194/acp-21-5151-2021, 2021.
22. Ramelli, F., Henneberger, J., David, R. O., Bühl, J., Radenz, M., Seifert, P., Wieder, J., Lauber, A., Pasquier, J. T., Engelmann, R., Mignani, C., Hervo, M., and Lohmann, U.: Microphysical investigation of the seeder and feeder region of an Alpine mixed-phase cloud, *Atmos. Chem. Phys.*, *21*, 6681–6706, doi.org/10.5194/acp-21-6681-2021, 2021.
23. Allen, R. J., Turnock, S., Nabat, P., Neubauer, D., Lohmann, U., Olivié, D., Oshima, N., Michou, M., Wu, T., Zhang, J., Takemura, T., Schulz, M., Tsigaridis, K., Bauer, S. E., Emmons, L., Horowitz, L., Naik, V., van Noije, T., Bergman, T., Lamarque, J.-F., Zanis, P., Tegen, I., Westervelt, D. M., Le Sager, P., Good, P., Shim, S., O’Connor, F., Akritidis, D., Georgoulias, A. K., Deushi, M., Sentman, L. T., John, J. G., Fujimori, S., and Collins, W. J.: Climate and air quality impacts due to mitigation of non-methane near-term climate forcers, *Atmos. Chem. Phys.*, *20*, 9641–9663, doi.org/10.5194/acp-20-9641-2020, 2020.
24. Bellouin, N., Quaas, J., Gryspeerdt, E., Kinne, S., Stier, P., Watson-Parris, D., Boucher, O., Carslaw, K. S., Christensen, M., Daniau, A.-L., Dufresne, J.-L., Feingold, G., Fiedler, S., Forster, P., Gettelman, A., Haywood, J. M., Lohmann, U., Malavelle, F., Mauritsen, T., McCoy, D. T., Myhre, G., Mülmenstädt, J., Neubauer, D., Possner, A., Rugenstein, M., Sato, Y., Schulz, M., Schwartz, S. E., Sourdeval, O., Storelvmo, T., Toll, V., Winker, D., and Stevens, B.: Bounding

- global aerosol radiative forcing of climate change. *Reviews Geophys.*, *58*, doi.org/10.1029/2019RG000660, 2020.
25. Eirund, G. K., A. Possner, and U. Lohmann, The impact of warm and moist air mass perturbations on Arctic mixed-phase stratocumulus. *J. Climate*, doi.org/10.1175/JCLI-D-20-0163.1, 2020.
 26. Gasparini, B., McGraw, Z., Storelvmo, T. and Lohmann, U., To what extent can cirrus cloud seeding counteract global warming? *Env. Res. Lett.*, *15*, doi.org/10.1088/1748-9326/ab71a3, 2020.
 27. Huang, W. T. K., C. S. Poberaj, B. Enz, C. Horat, and U. Lohmann, When does the Saharan Air Layer impede the intensification of tropical cyclones? *J. Climate*, *33*, 10609–10626, doi.org/10.1175/JCLI-D-19-0854.1, 2020.
 28. Lohmann, U., Friebel, F., Kanji, Z.A., Mahrt, F., Mensah, A.A. and Neubauer, D.: Future warming exacerbated by aged-soot effect on cloud formation. *Nature Geosci.* *13*, 674–680, doi.org/10.1038/s41561-020-0631-0, 2020.
 29. Mahrt, F., P. A. Alper, J. Dou, P. Gronquist, P. C. Arroyo, M. Ammann, U. Lohmann and Z. A. Kanji: Aging induced changes in ice nucleation activity of combustion aerosol as determined by near edge X-ray absorption fine structure (NEXAFS) spectroscopy. *Environ. Sci.: Processes Impacts* *22*, 895-907, doi.org/10.1039/c9em00525k, 2020.
 30. Mahrt, F., Kilchhofer, K., Marcolli, C., Grönquist, P., David, R. O., Rösch, M., Lohmann, U. and Kanji, Z. A.: The impact of cloud processing on the ice nucleation abilities of soot particles at cirrus temperatures. *J. Geophys. Res.*, *125*, doi.org/10.1029/2019JD030922, 2020.
 31. Mülmenstädt, J., C. Nam, M. Salzmänn, J. Kretzschmar, T. S. L’Ecuyer, U. Lohmann, P.-L. Ma, G. Myhre, D. Neubauer, P. Stier, K. Suzuki, M. Wang and J. Quaas: Reducing the aerosol forcing uncertainty using observational constraints on warm rain processes, *Sci. Adv.*, *6*, doi.org/10.1126/sciadv.aaz6433, 2020.
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