ORCID: https://orcid.org/0000-0003-4899-5871 **Andreas PLACH**

Publications

Peer-reviewed articles

23 McCrimmon, D., Chellman, N., Wensman, S., **Plach, A.,** and McConnell J. R. (2026): **Local Variability of Ice Core Ammonium and Black Carbon Records From Tunu and Summit, Greenland: Implications for Long-Term Biomass Burning Reconstructions.** JGR Atmospheres, 10.1029/2025JD046161

22 **Plach, A.,** Bakels, L., and Stohl A. (2025): **Reduction of Residence Time of Air in the Arctic Since the 1980s.** Geophysical Research Letters, 10.1029/2025GL118228

21 Vojta, M., **Plach, A.,** Thompson, R. L., Purohit, P., Stanley, K., O'Doherty, S., Young, D., Pitt, J., Arduini, J., Lan, X., and Stohl, A. (2025): **Quantifying European SF6 emissions from 2005 to 2021 using a large inversion ensemble.** Atmos. Chem. Phys., 10.5194/acp-25-15197-2025

20 Bakels, L., Blaschek, M., Dütsch, M., **Plach, A.,** Lechner, V., Brack, G., Haimberger, L., and Stohl, A. (2025): **LARA: a Lagrangian Reanalysis based on ERA5 spanning from 1940 to 2023.** Earth Syst. Sci. Data, 10.5194/essd-17-4569-2025

19 Eichler, A., Nalivaika, P., Kakareka, S., Kukharchyk, T., Jenk. T. M., Singer, T., Münster, T., Papina, T., Eyrikh, S., **Plach, A.,** Schwikowski, M. (2025): **Recent heavy metal pollution from the territory of the former Soviet Union (FSU): Ice core records and emission estimates.** Science of the Total Environment. 10.1016/j.scitotenv.2025.179632

18 Legrand, M., Vorobyev, M., Bokuchava, D., Kutusov, S., **Plach, A.,** Stohl, A., Khairedinova, A., Mikhalenko, V., Vinogradova, M., Ginot, P., Eckhardt, S., Preunkert, S. (2025): **Measurement Report: Changes in ammonia emissions since the 18th century in south-eastern Europe inferred from an Elbrus (Caucasus, Russia) ice-core record.** Atmos. Chem. Phys., 10.5194/acp-25-1385-2025

17 McConnell, J. R., Chellman, N. J., **Plach, A.,** Wensman, S. M., Plunkett, G., Stohl, A., Smith N.-K., Vinther, B. M., Dahl-Jensen, D., Steffensen, J. P., Fritzsche, D., Camara-Brugger, S. O., McDonald, B. T. and Wilson, A. I. (2025): **Pan-European atmospheric lead pollution, enhanced blood lead levels, and cognitive decline from Roman-era mining and smelting.** PNAS, 10.1073/pnas.2419630121, **Altmetric score >1300**

16 Frank, Y. A., Tatsii, D., Rednikin, A. R., **Plach, A.,** Rakhmatullina, S. N., Danil S. Vorobiev, D. S., Stohl, A. (2025): **It is snowing microplastics in Western Siberia. Environmental Pollution,** 10.1016/j.envpol.2024.125293, **Altmetric score > 100**

15 Vojta, M., **Plach, A.,** Annadate, S., Park, S., Lee, G., Purohit, P., Lindl, F., Lan, X., Mühle, J., Thompson, R. L., and Stohl, A. (2024): **A global re-analysis of regionally resolved emissions and atmospheric mole fractions of SF6 for the period 2005–2021.** Atmos. Chem. Phys., 10.5194/acp-24-12465-2024.

14 Bakels, L., Tatsii, D., Tipka, A., Thompson, R., Dütsch, M., Blaschek, M., Seibert, P., Baier, K., Bucci, S., Cassiani, M., Eckhardt, S., Groot Zwaaftink, C., Henne, S., Kaufmann, P., Lechner, V., Maurer, C., Mulder, M. D., Pisso, I., **Plach, A.,** Subramanian, R., Vojta, M., and Stohl, A. (2024): **FLEXPART version 11: improved accuracy, efficiency, and flexibility.** Geosci. Model Dev., 10.5194/gmd-17-7595-2024.

13 McConnell, J. R., Chellman, N. J., Wensman, S. M., **Plach, A.,** Stanish, C., Santibáñez, P. A., Brugger, S. O., Eckhardt S., Freitag, J., Kipfstuhl, S., Stohl, A. (2024): **Hemispheric-scale heavy metal pollution from South American and Australian mining and metallurgy during the Common Era.** Science of the Total Environment, 10.1016/j.scitotenv.2023.169431, **Altmetric score > 50**

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11 Brugger, S. O., Chellman, N. J., **Plach, A.,** Henne, P. D., Stohl, A., McConnell, J. R. (2024a): **Pollen in polar ice implies eastern Canadian forest dynamics diverged from climate after European settlement.** Geophysical Research Letters, 10.1029/2023GL105581, **Altmetric score > 50**

10 Legrand, M., McConnell, J. R., Bergametti, G., **Plach, A.**, Desboeufs, K., Chellman, N. J., Preunkert, S. and Stohl, A. (2023b): **A two-fold increase of phosphorus in Alpine ice over the twentieth century: contributions from dust, primary biogenic emissions, coal burning and pig iron production.** Bulletin of the American Meteorological Society, 10.1029/2023JD039236.

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7 Eckhardt, S., Pisso, I., Evangeliou, N., Groot Zwaaftink, C., **Plach, A.**, McConnell, J. R., Sigl, M., Ruppel, M. M., Zdanowicz, C., Lim, S., Chellman, N. J., Opel, T., Meyer, H., Steffensen, J. P., Schwikowski, M. & Stohl, A. (2023): **Revised historical Northern Hemisphere black carbon emissions based on inverse modeling of ice core records.** Nature Comm., 10.1038/s41467-022-35660-0.

Plach, A., Rüfenacht R., Kotthaus S., and Leuenberger M. (2022; preprint): **Analysis of high gas concentration and flux measurements at Swiss Beromünster tall tower.** 10.5194/egusphere-2022-1019.

6 Vojta, M., **Plach, A.**, Thompson, R. L., and Stohl, A. (2022): **A comprehensive evaluation of the use of Lagrangian particle dispersion models for inverse modeling of greenhouse gas emissions.** GMD, 10.5194/cp-17-317-2021.

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4 **Plach, A.**, Vinther, B. M., Nisancioglu, K. H., Vudayagiri, S., and Blunier, T. (2021): **Greenland climate simulations show high Eemian surface melt which could explain reduced total air content in ice cores.** Clim. Past, 17, 317–330, 2021, 10.5194/cp-17-317-2021.

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1 **Plach, A.,** Proschek, V., and Kirchengast G. (2015): **Profiling wind and greenhouse gases by infrared-laser occultation: algorithm and results from end-to-end simulations in windy air.** Atmos. Meas. Tech., 8, 2813-2825, 10.5194/amt-8-2813-2015.

Other academic articles

Proschek, V., **Plach, A.,** and Kirchengast G. (2014): Wind and greenhouse gas retrieval from LEO-LEO IR laser occultation in windy air: algorithm description and performance analysis. Tech. Rep. for ESA/ESTEC No. 1/2014 AEXPWIND TN4. Graz, Austria: Wegener Center, University of Graz. January 2014. **TECHNICAL REPORT.**

Plach, A. (2013): Atmospheric wind profiling based on LEO-LEO infrared-laser occultation. Wegener Center for Climate and Global Change, University of Graz. October 2013. **MASTER THESIS.**

Plach, A. (2011): Modelling of the water balance for the catchment of the Enns river (Styria). Department of Geography and Regional Science. University of Graz, Austria. August 2011. **MASTER THESIS.**

Presentations

Plach A., Eckhardt S., Evangeliou N., and Ekman A. M. L. (2026): Atmospheric transport characteristics during warm-air intrusions – focusing on aerosol, energy, and moisture transport, 10.5194/egusphere-egu26-12413, EGU General Assembly 2026. Vienna. Maz 2026. **POSTER.**

Plach A., Bakels L., and Stohl A. (2025): Exploring atmospheric transport into the Arctic 1940 to 2023 - A Lagrangian Perspective, 10.5194/egusphere-egu25-15824, EGU General Assembly 2025. Vienna. April 2025. **TALK.**

Plach A., Stohl A., Eckhardt S., Pisso I., McConnell J.R., Chellman, N.J., Legrand M., Eichler A., Brugger S. (2024): Using Lagrangian atmospheric transport modeling to interpret ice cores and study pathways into the Arctic, Stockholm University, Department of Meteorology (MISU) Seminar Series. Stockholm. 1st October 2024. **INVITED TALK.**

Plach A. (2025): Looking at air moving into the up area in the last two times four ten years - A move-with-parts look, 10.5194/egusphere-egu25-19186, EGU General Assembly 2025. Vienna. April 2024. Presentation in easy language as part of a Education and Outreach Session (EOS). **TALK.**

Plach A., Eckhardt S., Pisso I., Chellman, N., McConnell J.R., and Stohl, A. (2024): Evaluation of historical SO2 emissions based on an inversion of ice core records using atmospheric transport modeling, 10.5194/egusphere-egu24-2650, EGU General Assembly 2024. Vienna. April 2024. **POSTER.**

Plach A., Eckhardt S., Pisso I., McConnell J.R., and Stohl A. (2024): Evaluation of historical SO_2 emissions - using ice core records + atmospheric transport modeling, University of Natural Resources and Life Sciences (BOKU). Institute of Meteorology and Climatology. BOKU-Met Seminar. Vienna. 23rd April 2024. **INVITED TALK.**

Plach A., Eckhardt S., Pisso I., McConnell J.R., and Stohl A. (2024): Application of FLEXPART on an inversion of SO_2 emission constrained by ice-cores, Joint Oslo Seminar Series. Oslo. 29th February 2024. **INVITED TALK.**

Plach A., Eckhardt S., Pisso I., McConnell J.R., and Stohl, A. (2023): Lagrangian modeling used for improving ice core interpretation, 10.5194/egusphere-egu23-12369, EGU General Assembly 2023. Vienna. April 2023. **TALK.**

Plach, A., Leuenberger, M., and Stohl, A. (2022): FLEXPART model sensitivity study for the footprint of a Swiss tall tower site, 10.5194/egusphere-egu22-7206, EGU General Assembly 2022. Vienna. April 2022. **TALK.**

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Plach, A., Nisancioglu, K. H., Langebroek, P. M., Born, A., and Le clec'h, S. (2019): Eemian Greenland ice sheet simulated with a higher-order model shows strong sensitivity to SMB forcing. EGU2019-7383. Session CR5.3/CL4.06. EGU General Assembly 2019. Vienna. April 2019. **TALK.**

Plach, A., Nisancioglu, K. H., and Le clec'h, S. (2018): Simulated Eemian Greenland Surface Mass Balance shows strong sensitivity to SMB model choice. EGU2018-8693. Session CR1.2/CL4.19. EGU General Assembly 2018. Vienna. April 2018. **TALK.** / PalMod International Open Science Conference, Vienna. April 2018. **POSTER.**

Internat. Greenland surface mass balance workshop. Danish Meteorological Institute, Copenhagen. Organized by Mottram, R., and **Plach, A.** in November 2018. **WORKSHOP ORGANIZATION / TALK.**

Plach, A. (2018): Meltwater production in a warmer climate. Influence on NEGIS?. North East Greenland Ice Stream (NEGIS) workshop and EastGRIP steering committee meeting. October 2017. **TALK.**

Plach, A. and Nisancioglu, K. H. (2016): Simulation of the Greenland Ice Sheet (GrIS). How is the GrIS behaving in a warmer climate? Division seminar. Atmosphere and Ocean Research Institute (AORI). Division of Climate System Research. University of Tokyo. Tokyo, Japan. June 2016. **INVITED TALK.**

Plach, A. and Nisancioglu, K. H. (2016): Modeling the Greenland Ice Sheet during the Eemian Interglacial. A review with focus on the atmosphere-ice coupling scheme. Japan-Norway Arctic Science and Innovation Week, Tokyo, Japan / Goldschmidt Conference 2016. Yokohama, Japan. June 2016. **POSTER.**

Plach, A. and Nisancioglu, K. H. (2016): Simulation of the Greenland Ice Sheet (GrIS). Coupling atmosphere and ice sheet. Greenland In a Warmer Arctic (GIWA) workshop. Gif-sur-Yvette, France. May 2016. **INVITED TALK.**