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

Publications

Under review

Plach, A., Bakels, L., Stohl, A. (under review): **Reduction of residence time of air in the Arctic since the 1980s.** Geophysical Research Letters. ESS Open Archive. Submitted: 22 July 2025, 10.22541/essoar.175318972.29624962/v1

Vojta, M., **Plach, A.,** Thompson, R. L., Purohit, P., Stanley, K., O'Doherty, S., Young, D., Pitt, J., Lan, X., Stohl, A. (under review): **A thousand inversions to determine European SF6 emissions from 2005 to 2021.** EGUsphere preprint repository. Discussion started: 20 March 2025, 10.5194/egusphere-2025-1095

Peer-reviewed articles

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 >1000**

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**

12 Brugger, S. O., McWethy, D. B., Chellman, N. J., Prebble, M., Courtney Mustaphi C. J., Eckhardt, S., **Plach, A.,** Stohl, A., Wilmshurst, J. M., McConnell, J. R., Whitlock, C. (2024b): **Holocene black carbon in New Zealand lake sediment records.** Quarternary Science Reviews, 10.1016/j.quascirev.2023.108491.

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.

9 Eichler, A., Legrand, M., Jenk, T. M., Preunkert, S., Andersson, C., Eckhardt, S., Engardt, M., **Plach, A.**, and Schwikowski, M. (2023): **Consistent histories of anthropogenic western European air pollution preserved in different Alpine ice cores.** The Cryosphere, 10.5194/tc-17-2119-2023.

8 Legrand, M., McConnell, J. R., Bergametti, G., Preunkert, S., Chellman, N., Desboeufs, K., Lestel, L., **Plach, A.**, and Stohl, A. (2023a): **Alpine-ice record of bismuth pollution implies a major role of military use during World War II.** Scientific Reports, 10.1038/s41598-023-28319-3.

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.

5 Legrand, M., McConnell, J. R., Preunkert, S., Bergametti, G., Chellman, N. J., Desboeufs, K., **Plach, A.**, Stohl, A. & Eckhardt, S. (2022): **Thallium Pollution in Europe Over the Twentieth Century Recorded in Alpine Ice: Contributions From Coal Burning and Cement Production.** GRL, 10.1029/2022GL098688.

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.

3 **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 surface mass balance forcing.** The Cryosphere, 13, 2133–2148, 10.5194/tc-13-2133-2019.

2 **Plach, A.**, Nisancioglu, K. H., Le clec'h, S., Born, A., Langebroek, P. M., Guo, C., Imhof, M., and Stocker, T. F. (2018): **Eemian Greenland SMB strongly sensitive to model choice.** Clim. Past, h10.5194/cp-14-1463-2018.

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.