

HTAP3-OPNS

OPNS: Ozone, Particles, and the Deposition of N and S

Check-in meeting

February 2, 2026, online

Agenda for this meeting

- Registration for the 2026 HTAP annual meeting is open
- Summary of the last check-in meeting
- Reminder about documentation for the exercise
- Update on emissions
- Update to data request
- Regional modelling experiments for Europe
- Presentation of preliminary results
- Next steps
- Discussion of any open questions

HTAP annual meeting 2026

- April 8-10 in Hamburg, Germany and online
- Hosted by the Helmholtz Centre Hereon
- <https://eveeno.com/htapspringmeeting2026>
- Sessions on all HTAP activities
 - OPNS
 - Fires
 - Mercury
 - PFAS



Summary of the last check-in meeting

- Update to the HTAP3 region definitions
 - Affected regions: EMEP East and EMEP West
 - Please use the latest version on zenodo (Version 4, November 2025)
 - <https://zenodo.org/records/17712022>
- Soil moisture (if included in your model)
 - Please save and report soil moisture on all model levels

Documentation for HTAP3-OPNS

- White paper:
<https://docs.google.com/document/d/1CYgWl2ZzrQVIbcohU9gcOSMNwCIFBmGT>
- Technical guidance documents:
 - CTM / Future Perturbation:
https://docs.google.com/document/d/188RzxxTQ8tjXZ6pfpNj2C4TPJI_aD6zZ
 - CCM / Future Transient:
<https://docs.google.com/document/d/1NWD6rgXQBynvGbKJFdvK6HWSt5eqphX6>
 - Regional modelling for Europe:
<https://docs.google.com/document/d/1wQFd29yCqeNKOcGZdJQvelB-SjULTyFi>
 - Historical transient: https://docs.google.com/document/d/1ALab-bt_6461-cDt6VMAFQS14H4wEGch
 - Data submission:
<https://docs.google.com/document/d/1AV7Nh8bWrtxKtqWeN-b9S-juKgSouJIm>

Emission datasets per work stream

Model runs	Emission data source				
	Anthro.	Aviation	Ag. Burning	Wildfires	CH ₄ (emis/conc)
Future Transient (2010-2050)	GAINS LRTAP	Corrected CMIP6	GAINS LRTAP	2010-2019 GFAS (w/o ag burning) 2020-2050 Hamilton et al.	GAINS LRTAP / Met.no
Future Perturbation (2040 emis/2015 met)	GAINS (for 2040)	Corrected CMIP6	GFAS4HTAP (for 2015)	GFAS4HTAP (for 2015)	Met.no
Future Regional Models (2040 emis/2015 met)	GAINS (for 2040)	Corrected CMIP6	GFAS4HTAP (for 2015)	GFAS4HTAP (for 2015)	Met.no
Historical Transient (2003-2020)	HTAPv3.2	HTAPv3.2	GFAS4HTAP	GFAS4HTAP	NOAA

- All datasets are now available
- Download links are available in the white paper and technical guidance documents

Future fire emissions are now ready

- Only applicable for the CCM Future transient runs
- <https://zenodo.org/records/17644151>
- White paper and guidance document updated

The screenshot shows the Zenodo dataset page for "HTAP3-Future-Fires-SSP245 by vegetation type". The page header includes the Zenodo logo, a search bar, and navigation links for "Communities" and "My dashboard". On the right, there are "Log in" and "Sign up" buttons. The dataset is published on November 18, 2025, and is version v1. It has 44 views and 227 downloads. The authors are Bergas-Massó, Elisa and Hamilton, Douglas. The dataset title is "Decadal monthly climatologies of fire emissions by vegetation type under SSP2-4.5 for HTAP3". The institution is North Carolina State University — Department of Marine, Earth and Atmospheric Sciences (NCSU-MEAS). The contacts are Douglas S. Hamilton (dshamil3@ncsu.edu) and Elisa Bergas-Massó (ebergas@ncsu.edu). The description states that the dataset contains fire emissions from natural forest and grassland fires as calculated by an ensemble of CMIP6 climate models with interactive fires merged with tropical deforestation and peat fires from the SSPs fire emission dataset. All climate model emissions are biased-corrected towards GFAS4HTAP dry matter consumed (2015-2020 mean). Emission factors used are reported in GFAS4HTAP dataset (https://zenodo.org/records/15721463). A separate file is provided for each species. Each file contains three variables, with emissions from grassland fires, forest fires, and peat fires reported separately. The decades provided are 2015-2020, 2021-2030, 2031-2040, 2041-2050, 2051-2060, 2061-2070, 2071-2080, 2081-2090, and 2091-2100. The page also features a "Show affiliations" button and a "Cite all versions" section with the DOI 10.5281/zenodo.17644151.

zenodo Search records... Communities My dashboard Log in Sign up

Published November 18, 2025 | Version v1 Dataset Open

HTAP3-Future-Fires-SSP245 by vegetation type

Bergas-Massó, Elisa¹; Hamilton, Douglas¹

Show affiliations

README — HTAP3 Future Fires Emissions (SSP2-4.5)

Dataset title:
Decadal monthly climatologies of fire emissions by vegetation type under SSP2-4.5 for HTAP3

Institution:
North Carolina State University — Department of Marine, Earth and Atmospheric Sciences (NCSU-MEAS)

Contacts:

- Douglas S. Hamilton — dshamil3@ncsu.edu
- Elisa Bergas-Massó — ebergas@ncsu.edu

1. Description

Fire emissions from natural forest and grassland fires as calculated by an ensemble of CMIP6 climate models with interactive fires merged with tropical deforestation and peat fires from the SSPs fire emission dataset. All climate model emissions are biased-corrected towards GFAS4HTAP dry matter consumed (2015-2020 mean). Emission factors used are reported in GFAS4HTAP dataset (<https://zenodo.org/records/15721463>).

A separate file is provided for each species. Each file contains three variables, with emissions from grassland fires, forest fires, and peat fires reported separately.

Decades provided are:

2015-2020, 2021-2030, 2031-2040, 2041-2050, 2051-2060, 2061-2070, 2071-2080, 2081-2090, 2091-2100

44 VIEWS 227 DOWNLOADS Show more details

Versions

Version v1	Nov 18, 2025
10.5281/zenodo.17644151	

Cite all versions? You can cite all versions by using the DOI 10.5281/zenodo.17644150. This DOI represents all versions, and will always resolve to the latest one. Read more.

External resources

Indexed in

OpenAIRE

Details

DOI

DOI 10.5281/zenodo.17644151

Updates to the data request

- <https://nextcloud.gfz.de/s/sp8XmMY2rQizjA4>
- Ozone deposition velocity added to hourly 2D fields
 - Was referenced in the white paper but not properly included in the data request
- Requested reporting on land surface types should follow AQMEII4
 - See Galmarini et al. (2021) <https://acp.copernicus.org/articles/21/15663/2021/>

Generic LULC categories for remapping

Water
Developed/urban
Barren
Evergreen needleleaf forest
Deciduous needleleaf forest
Evergreen broadleaf forest
Deciduous broadleaf forest
Mixed forest
Shrubland
Herbaceous
Planted/cultivated
Grassland
Savanna
Wetlands
Tundra
Snow and ice

Regional modelling in HTAP3-OPNS

- Regional modelling kick-off on January 21
- Boundary conditions from IFS-COMPO are available
 - CAMS regional ensemble domain
- Boundary conditions from the EMEP model are coming
 - Which domain will groups using this dataset run?
- How to split the GAINS transport sector into F1-F4?
- Simplified data request for regional modellers

Preliminary results and discussion

Closing slides

Participation in HTAP3-OPNS

- Tables for contribution of model runs and participation in the analysis are available here:
 - <https://nextcloud.gfz.de/s/anZw7MLYMzpbqyW>
- Please check and update
 - Planned contributions to both the model runs and the analyses
 - Information about your model

Planned/potential analyses and output fields

- Model evaluation
- Source-receptor relationships and emulator development
- Assessment of future air quality
- Ozone impact on health
- Ozone impact on vegetation
- Total atmospheric deposition of air pollutants
- Climate forcing of air pollution
- Climate penalty on air pollution
- Ozone budget analysis

Timeline

- All model experiments can now begin
- HTAP spring meeting April 2026
 - Preliminary results
- EMEP Steering body meeting September 2026
 - Preliminary results and early analyses
 - Progress report from HTAP to EMEP
- Most publications submitted by end of 2027
 - Including final report to EMEP

Next steps

- Finalisation of the white paper and submission as an experiment description paper to GMD
- Ongoing simulations
- Submission of results to the Aerocom server
- Analysis of results

Questions and discussion

- Question posed on the htap-opns-discuss email list:
 - **Q: How to do spinup for the CTM perturbation runs?**
 - A: Each perturbation run needs its own spinup.
- Questions directly by email:
 - **Q: Many different runs will have identical output fields (eg. meteorology for CTM experiments). Do these need to be provided for every run?**
 - A: It is OK to provide a full set of fields for the base run and for additional runs only the fields which differ from the base run.
 - **Q: OK to provide 3D potential temperature instead of absolute temperature?**
 - A: The data request specifies absolute temperature and the conversion is straightforward.
 - **Q: 3D monthly aerosol composition fields: provide both coarse and fine?**
 - A: This should be the total mass of all resolved aerosol sizes.
- More questions?

Future meeting schedule

- We plan regular meetings to exchange information on progress with the work and discussion of results
 - April 8-10, 2026: HTAP spring meeting, in person and online
 - <https://eveeno.com/htapspringmeeting2026>
 - Early summer 2026: check-in
 - Early September 2026: check-in

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