



EDGAR-HTAPv3 global emissions mosaic

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Motivation for a new HTAP mosaic

UNECE's Convention on Long-range
Transboundary Air Pollution (1979)

Review of the Gothenburg Protocol



A global mosaic of officially reported
emissions:



Gas: SO₂, NO_x, CO, NMVOC, NH₃
Particles: PM₁₀, PM_{2.5}, BC, OC



All sources, 16 sectors
(no wild fires)



2000-2018
monthly



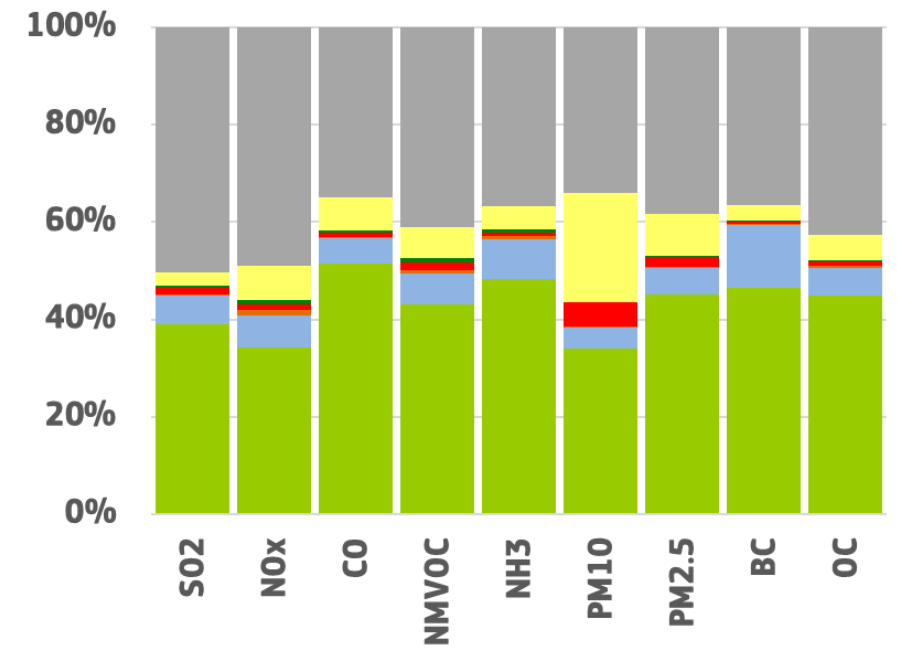
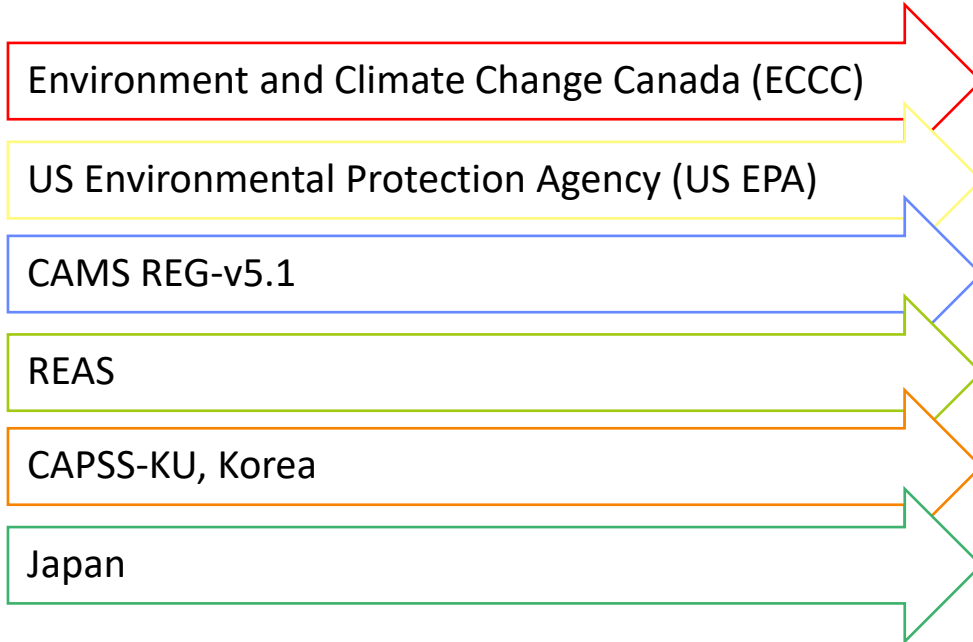
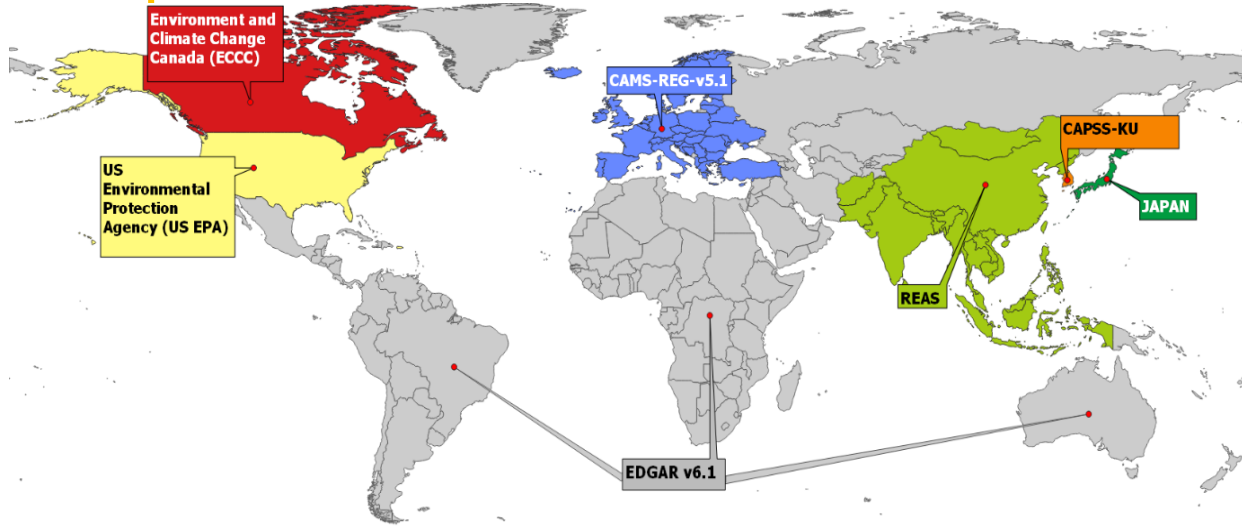
Global gridmaps:
0.1°x0.1° resolution



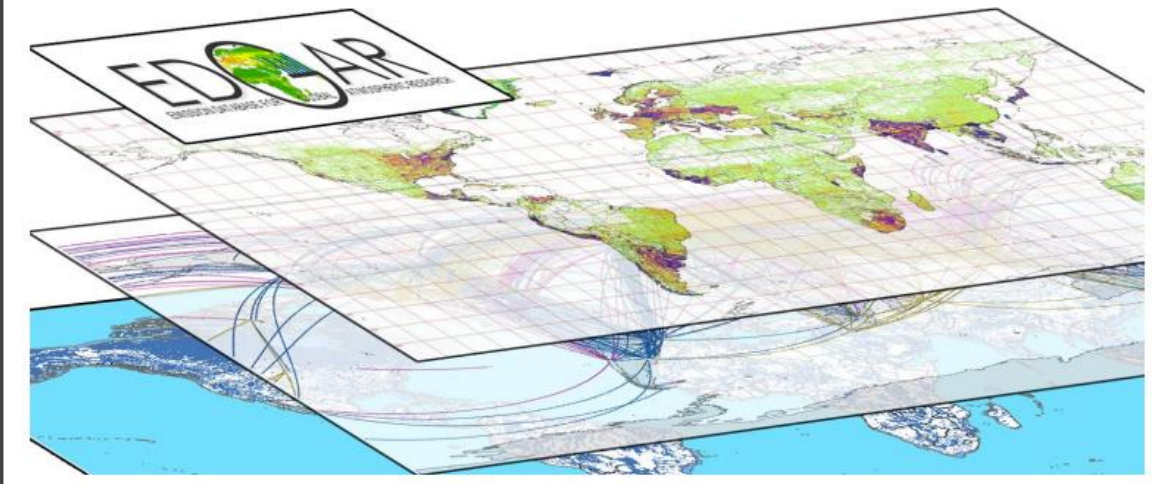
**Task Force on Hemispheric
Transport of Air Pollution**



HTAP_v3 data providers

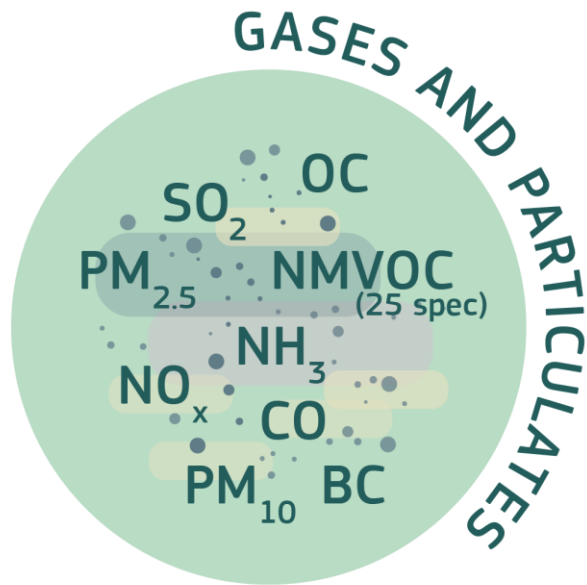


Assembling regional gridmaps at 0.1° x0.1° resolution



HTAPv3 mosaic overview

All sources, 16 sectors (no wild fires)



HTAP_v3 main sectors	HTAP_v3 detailed sectors
HTAP_1: International Shipping	HTAP_1: International Shipping
HTAP_2: Aviation	HTAP_2.1: Domestic Aviation
	HTAP_2.2: International Aviation
HTAP_3: Energy	HTAP_3: Energy
HTAP_4: Industry	HTAP_4.1: Industry
	HTAP_4.2: Fugitive
	HTAP_4.3: Solvents
HTAP_5: Ground Transport	HTAP_5.1: Road Transport
	HTAP_5.2: Brake and Tyre wear
	HTAP_5.3: Domestic shipping
	HTAP_5.4: Other ground transport
HTAP_6: Residential	HTAP_6: Residential
HTAP_7: Waste	HTAP_7: Waste
HTAP_8: Agriculture	HTAP_8.1: Agricultural waste burning
	HTAP_8.2: Agriculture_livestock
	HTAP_8.3: Agriculture_crops



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Earth System
Science
Data

The HTAP_v3 emission mosaic: merging regional and global monthly emissions (2000–2018) to support air quality modelling and policies

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<https://essd.copernicus.org/articles/15/2667/2023/essd-15-2667-2023.pdf>

Data availability and HTAP_v3 tool

- HTAP_v3 data can be freely downloaded on the EDGAR website:
https://edgar.jrc.ec.europa.eu/dataset_htap_v3
- HTAP tool: to extract emissions maps over certain geographical domain

Resolution: 0.1x0.1

Type: Emission

Split: Yearly

Period From: 2000

Period To: 2018

Select compounds*: Select an item

Longitude W*:

Longitude E*:

Latitude S*:

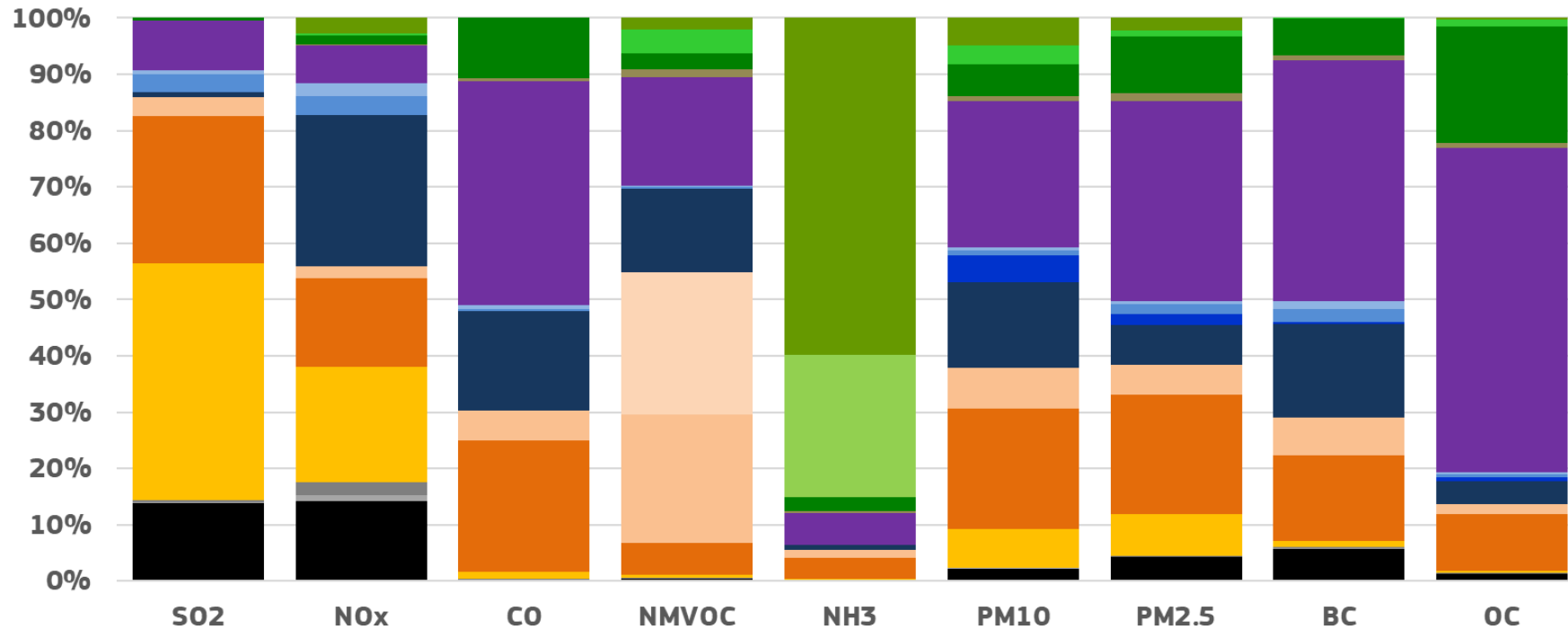
Latitude N*:



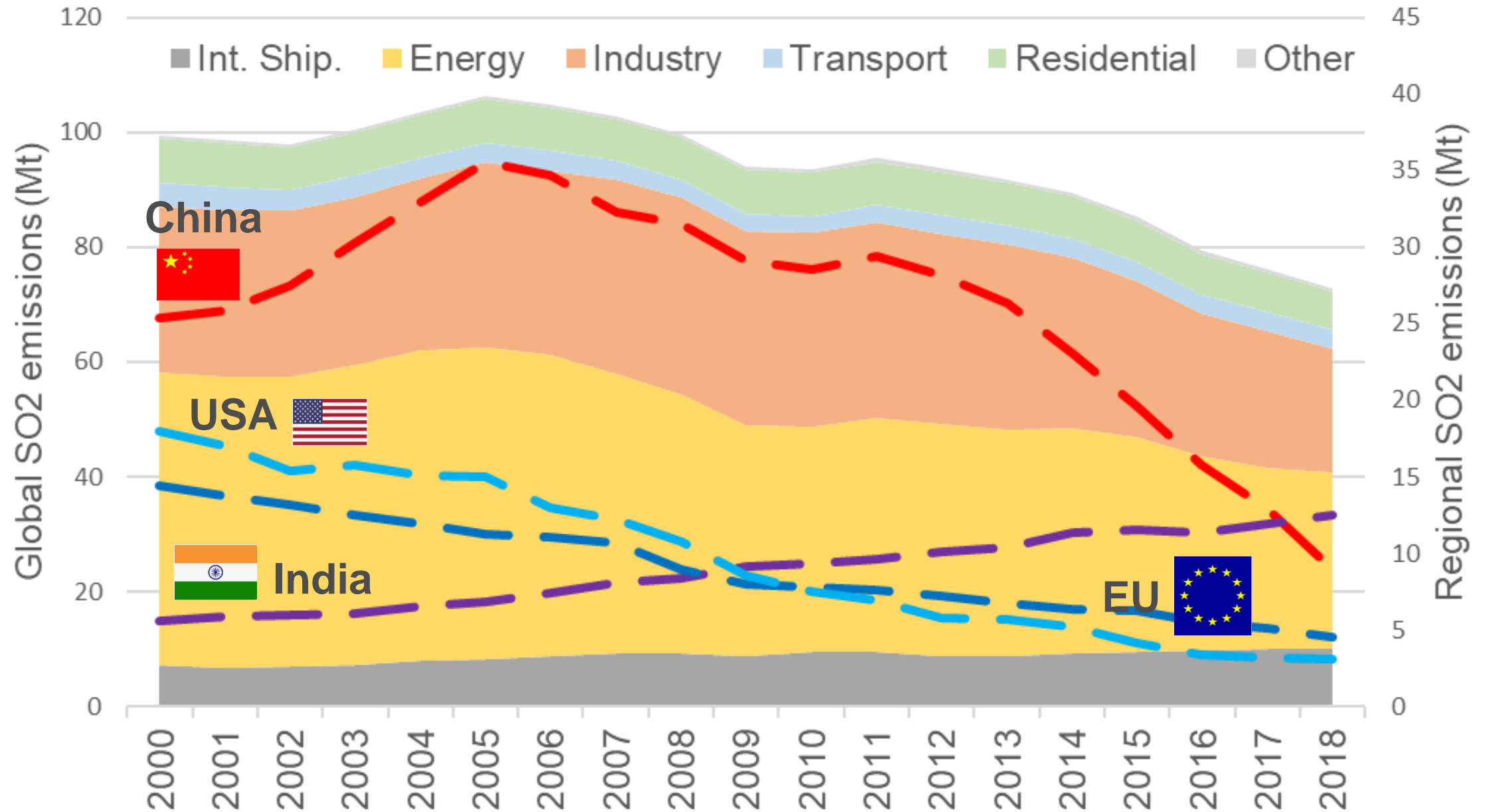
Need of having an ECAS account:

https://webgate.ec.europa.eu/tracesnt-help/Content/C_EU%20login/create-a-new-EU-login-account.htm

Aggregated sectoral contributions to the emissions (2018)



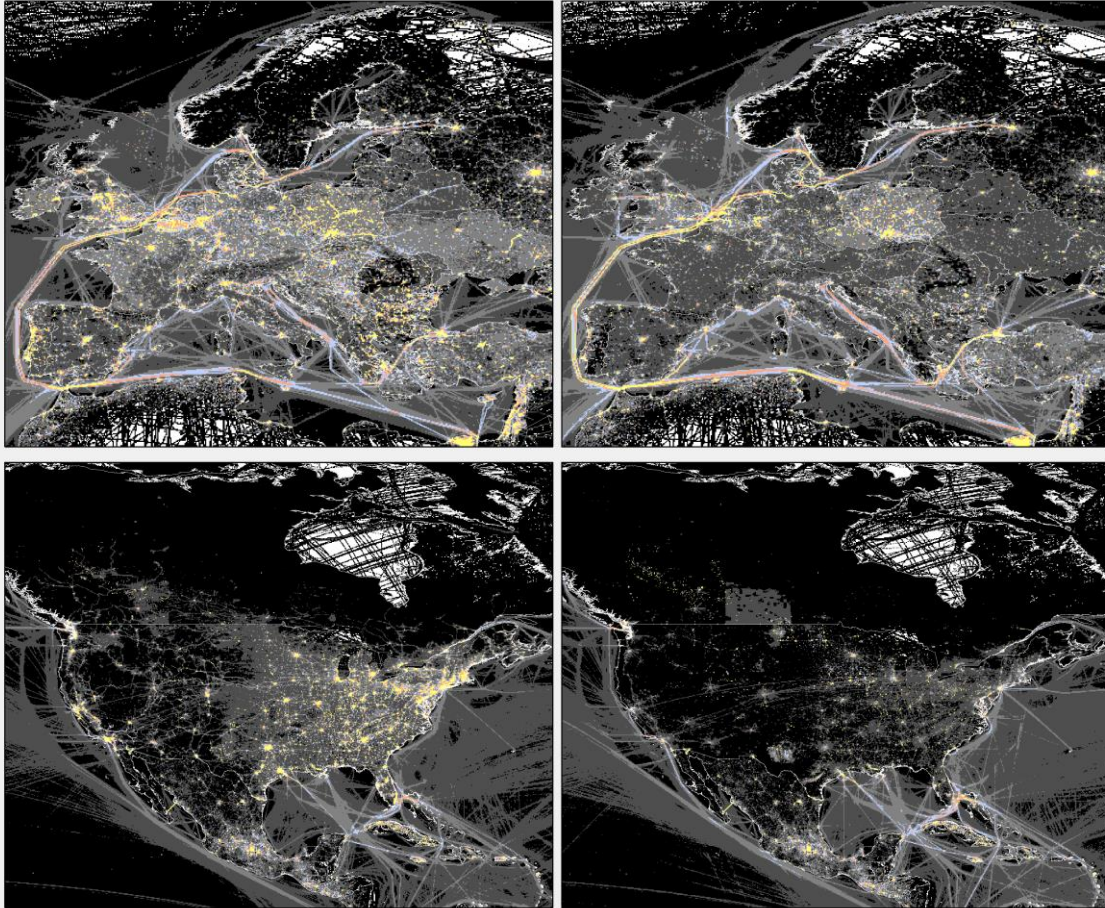
HTAP_v3: a tool for emissions time series analysis (SO2)



SO2 emissions gridmaps (2000-2018)

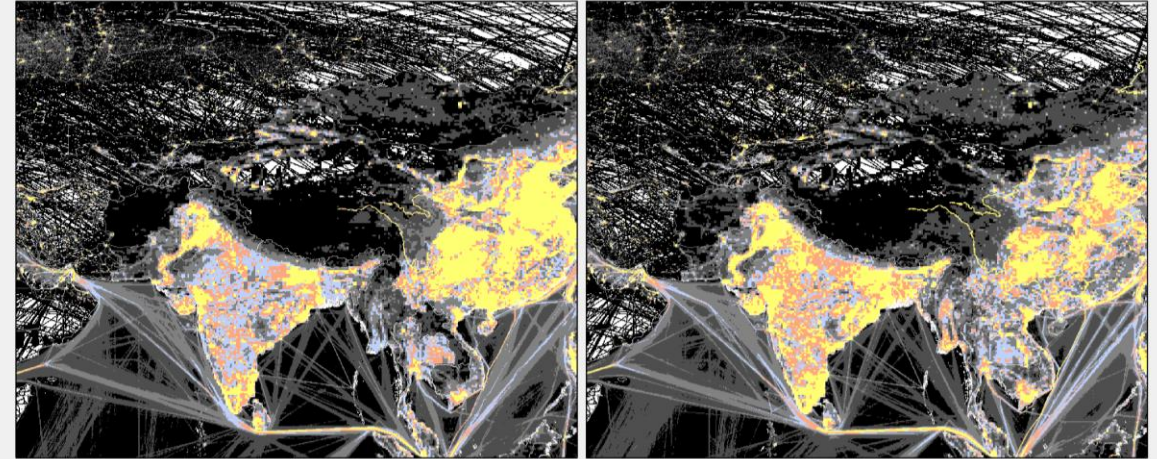
2000

2018

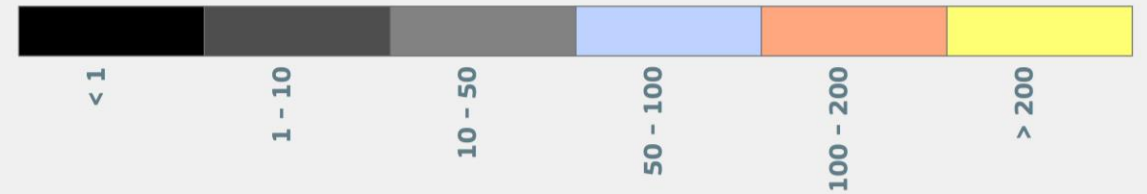


2000

2018

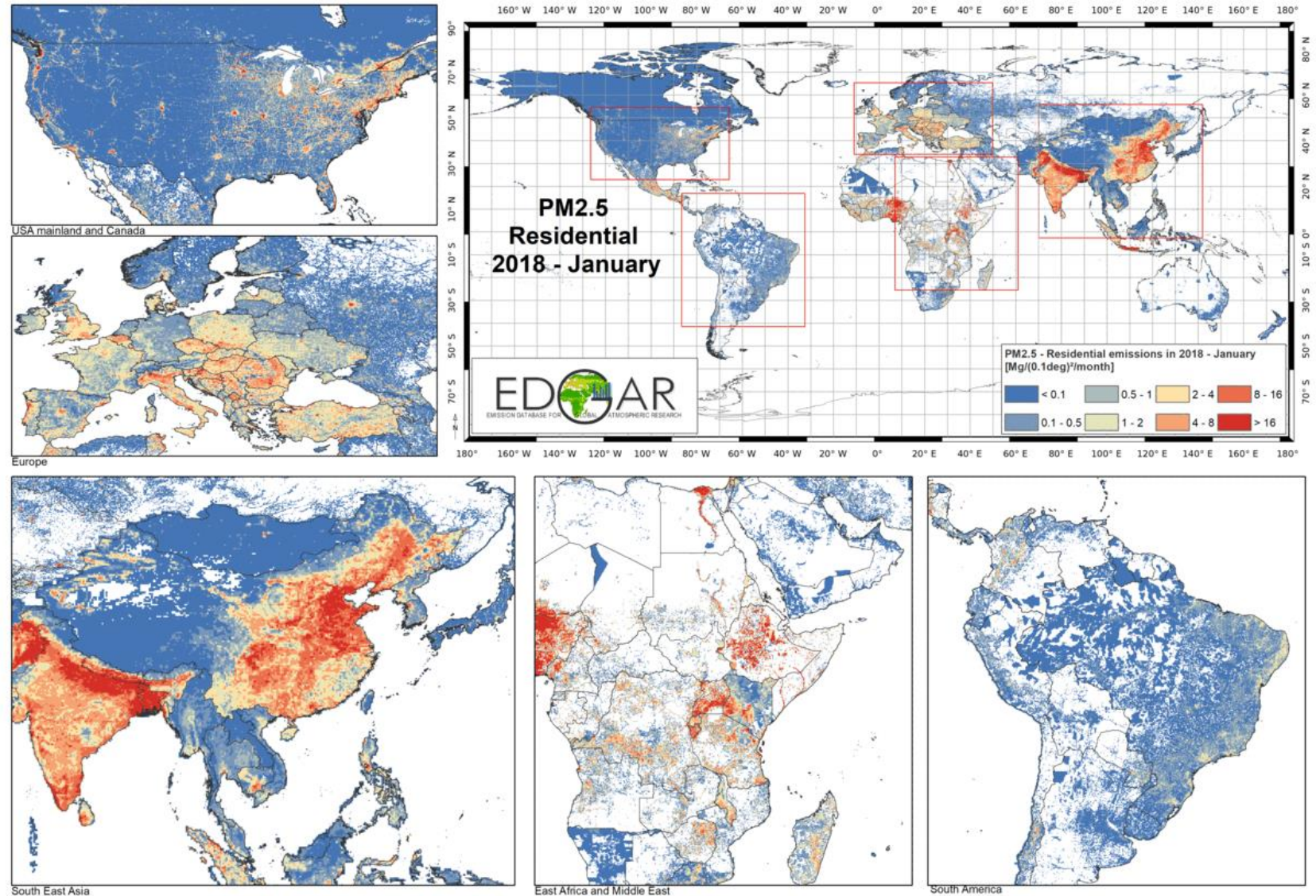


SO2 emissions (ton)



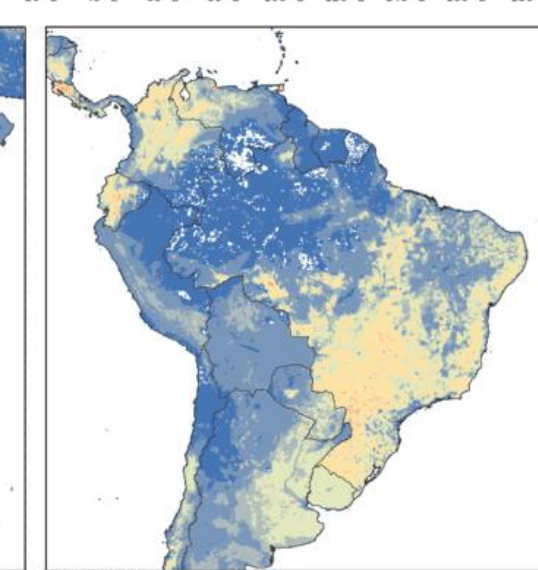
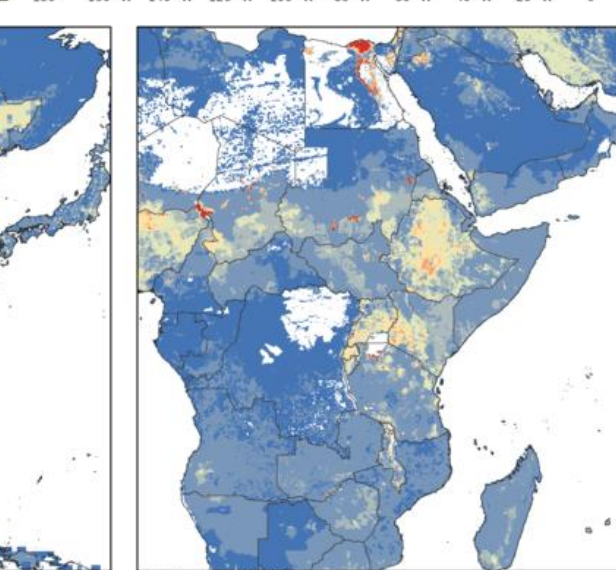
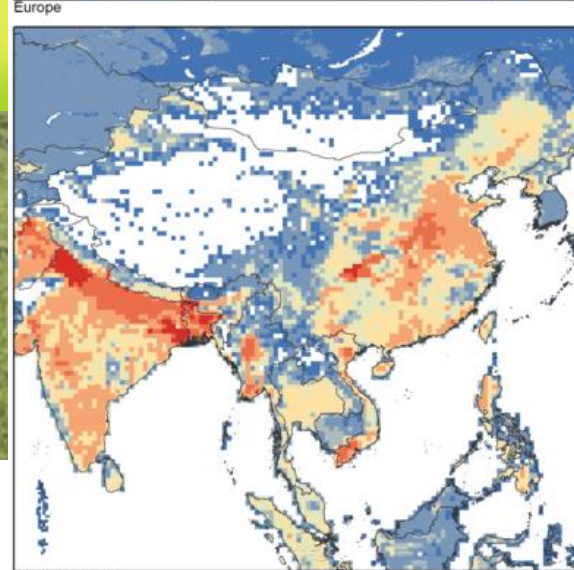
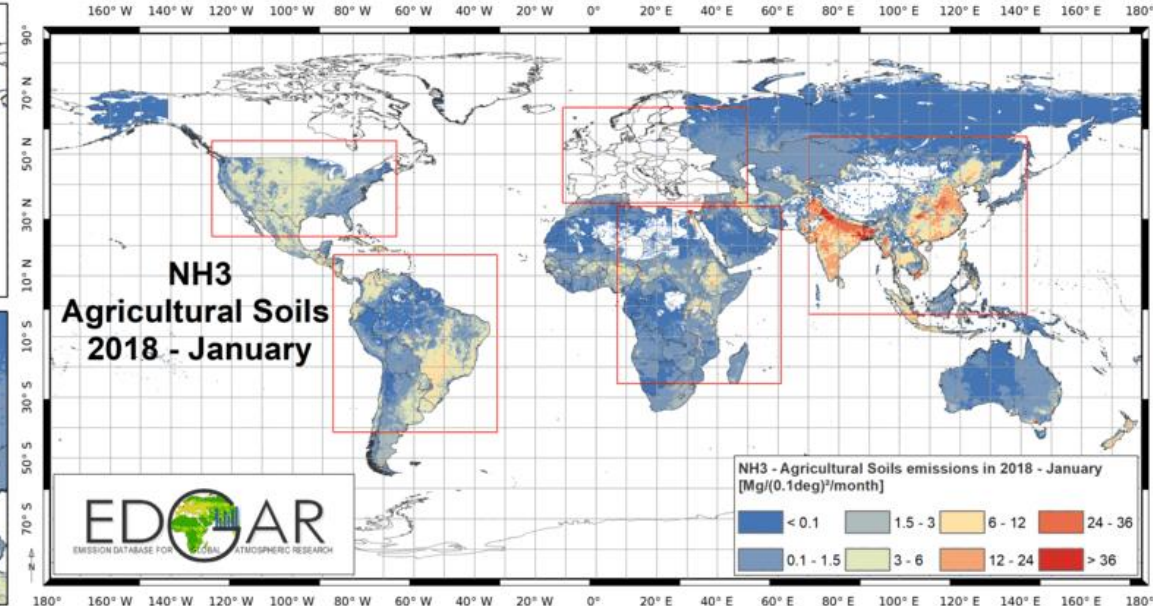
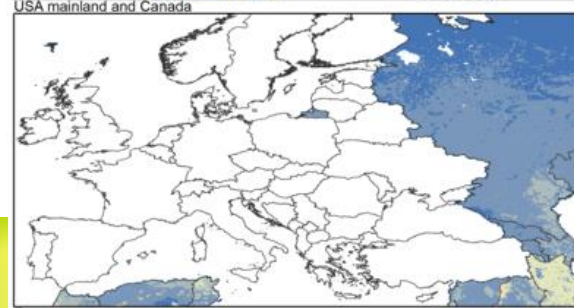
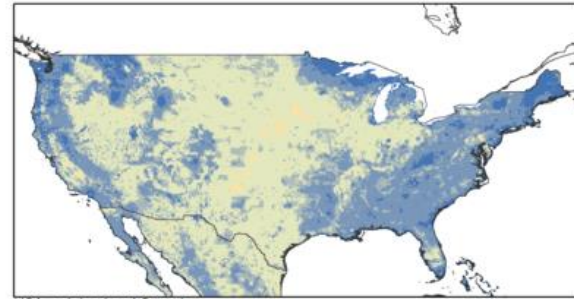
PM2.5 monthly emissions from the residential sector (2018)

PM2.5 emissions from household



Emissions from agriculture have a strong seasonal and regional variability

NH₃ emissions from crops cultivation



Future updates

- To support upcoming modelling activities, HTAP_v3.1 mosaic will be released in Fall 2024, including:
 - Extension of timeseries up to 2020
 - China emissions from MEIC
 - Improvement of input data: transport emissions for Japan, PMs for US, BC/OC for Europe
 - EDGAR v8.1_AP dataset for the rest of the world and gapfilling:
https://edgar.jrc.ec.europa.eu/dataset_ap81 (May 2024)

Thank you



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