

Use of the ECCAD database of emissions in PAPILA : a tutorial

ECCAD database website - https://eccad.aeris-data.fr/

The home page



ECCAD : Making data accessible and providing tools for data analysis



ECCAD database website - https://eccad.aeris-data.fr/

Access to the emission datasets

ECCAD : Making data accessible and providing tools for data analysis



Click on "Inventories" \rightarrow list of all available datasets : inventories + ancillary data



Click on "Species" \rightarrow list of all available species + their origin + their molecular mass The colored dots show the type of emissions for each species

Cata	alogue	Da	ata 8	&То	ols	Meta	data																																Engli	sh `	~	8	Sign
Inve	entories	Spec	cies	Se	ctors	Versio	ons 1	Tempor	al	Geograp	ohical																																
Anthr	ropogenic 🤇	Biom	nass bi	urning	Bio	ogenic	Ocea	nic 🔵 S	oil 🥚	Volcanic	😑 lig	htnin	g 🌒 1	lermit (es 🔵	total	• ve	egetatio	on 🥚	Fires	😑 Ge	eograp	ohy 🌔	Popu	lation (pixe	l area	🛑 Tem	poral p	orofiles													
ピ Major Spec	cies																																										
Paramete	ers	CH4 (CO2 1	N2O	CO2- excl- short- cycle	CO2_ff	CO2_bf	CO2- organic cycle	H2	NMVOCs	NO2	NO3	NOx	со	ocs	SO2	DMS	NH3	NH4 :	SO4 F	M1 as	sh fin	C- EC e fin	- SO4 e fine	l- Na- e coars	e TPN	Na- fine	SO4- coarse	ом	OC- coarse	PM2.5	other- minerals- coarse	тс	PM10	ос	other- minerals- fine	EC- coarse	EC	вс н	g Hg G	- Hg- D	Hg- P	Cd Pb
Molecular N	Mass	16	44	44	44	44	44	44	2	72	44	1	30	28	60	64	62	17	17	96	1 1	1 12	2 12	2 96	11	1	11	96	1	12	1	1	12	1	12	1	12	12	12 20	00 200	0 200	200	112 207
CAMS		**	••	••	•	•	•	•	•	••				•	•	•	••	••		•	•			•	•	•	•	•		•	••	•	•	•	••	•	•	•					
CEDS		•	•							•			•	٠		•		•																	•				•				
ECLIPSE	E	•								•			•	•		•		•											•		٠			•	•				•				
EDGAR	t i	•	•	•	•			•		•			•	•		•		•													•			٠	•		•		• •	•	•	•	
Future Scena	arios	••								••			••	••		••		••																	••				-				
GEIA				••									•••			••																							-				
GLOBAL more of	datasets	•	••	••		٠	•		-	••			•••			••	•	••								•					•		•		••				-				
Inverse Mode	elling										•		. 🚏	••		•																	•						•				
REGIONAL da	atasets	••	••	••		•	•		•	•		•	••	••	•	••		••	•	•											••			••	••				- -				• •

CFC/Halogenated/Chlorinated species

Parameters	CINO2	CH2Cl2	сі	ALD2	FORM	C2Cl4	CH2Br2	CFC12	PFOA	hydrogen-cyanide	CH3CCI3	CHBr3	СНЗСІ	СНЗІ	HCI	chlorinated-HC	CHCICCI2	PFOS	CHCI3	CFC11	ALDX
Molecular Mass	35	35	35	1	1	35	174	120	500	27	35	253	35	142	35	138	35	500	35	137	1
CAMS							٠			•		٠	٠	••		•					
CEDS																•					
EDGAR																•					
Future Scenarios																••					
GEIA	٠	••	٠					•			••		••				•		••	•	
GLOBAL more datasets									٠							••		٠			
REGIONAL datasets				•	•											•					•

L Alkanes/Alkenes/Alkynes

Parameters	octene	butanes-and-higher-alkanes	propyne	hexanes	butenes	propadiene	ethane	butanes	propane	butenes-and-higher-alkenes	propene	ethene	pentenes	hexanes-and-higher-alkanes	heptane	pentanes	acetylene	hexene	other-alkenes-and-alkynes
Molecular Mass	112	58	40	86	56	40	30	58	44	56	42	28	70	86	98	72	26	84	56
CAMS	•	••		••	•			••	•••	••	••	•••	•		•	••	•	•	•
CEDS							٠	•	•		٠	•		•		•	•		•
EDGAR							•	•	•		•	•		•		•	•		•
Future Scenarios							••	••	••		٠	••		••			••		••
GLOBAL more datasets		•••					••••	•••		•••		••••		••			••		••
REGIONAL datasets		•	•			•	••	•	••	•	٠	••		•		•	••		•

More information on the species: all molecular masses have been harmonized. Be careful with NOx emissions: in ECCAD, all the Nox emissions are given in kg NOx-NO/m2/s Note: in many papers, no information is given about the molecular mass of NOx \rightarrow be careful

Major Species

Parameters	CH4	CO2	N2O	excl- short- cycle	CO2_ff	CO2_bf	CO2- organic- cycle	H2	NMVOCs	NO2	NO3	NOx	со	ocs	SO2	DMS	NH3	NH4	SO4
Molecular Mass	16	44	44	44	44	44	44	2	72	44	1	30	28	60	64	62	17	17	96
CAMS	88	••	••	•	•	٠	۲	•	••							••	••		٠
CEDS	•	٠							•				•		٠		•		
ECLIPSE	•								•				•		•		•		
EDGAR	•	•	•	•			٠		•				•		٠		٠		
Future Scenarios	••								••			••	••		••		••		
GEIA			••									•••			••				
GLOBAL more datasets	•	••	••		•			-	••				-		••	•	••		
Inverse Modelling										•		**	••		•				
REGIONAL datasets	••	••	••		•	•		•	•		•	••	••	•	••		••	•	•

Click on "Sectors" \rightarrow list of all available sectors

Note: the original names of the sectors given by the different inventories are listed. Different names can correspond to the same sector.

Catalogue Data & Tools Metadata Inventories Species Sectors Versions Temporal Geographical Dataset Select Dataset Select						English V 🝞 Sig	gn in
Sector			c	Dataset			
Agric. waste	ACCMIP RCP45	ECLIPSE-GAINS-V5a RCP60	ECLIPSE-V6 RCP85	MACCity-CONFORM	MACCity-anthro	RCP3PD	
Agricultural soils	EDGARv4.3.2 INEMA2.0-Chile	EDGARv4.3.2-monthly	EDGARv5	EDGARv5-monthly	EDGARv6	EDGARv7	
Agricultural waste burning	CAMS-GLOB-ANT EDGARv6	CNEA-3iA-GEAA EDGARv7	EDGARv4.3.2 GEIA-N2O	EDGARv4.3.2-monthly GFED4	EDGARv5 HTAPv3	EDGARv5-monthly INEMA2.0-Chile	
Agricultural waste burning Adjust. Factor							
Agriculture	ACCMIP Global-Ch MPI-CNRS SSPs	CAMS-GLOB-ANT HTAPv2 PARASOL	CEDS HTAPv3 RCP3PD	CR2-MMA MACCity-CONFORM RCP45	ECLIPSE-GAINS-V5a MACCity-anthro RCP60	ECLIPSE-V6 MIXv2 RCP85	
Agriculture and Landuse change	RETRO						
Agriculture livestock	CAMS-GLOB-ANT PAPILA	CAMS-REG-ANT	CAMS-REG-AP	CAMS-REG-GHG	EMEP	HTAPv3	
Agriculture livestock Adjust. Factor							
Agriculture livestock daily weights	CAMS-REG-TEMPO						
Agriculture livestock monthly weights	CAMS-GLOB-TEMPO	CAMS-REG-TEMPO					
Agriculture monthly weights NH3							
Agriculture monthly weights others							
Agriculture other	CAMS-REG-ANT	CAMS-REG-AP	CAMS-REG-GHG	EMEP			
Agriculture other monthly weights	CAMS-REG-TEMPO						
Agriculture soil daily weights	CAMS-REG-TEMPO						
Agriculture soil monthly weights	CAMS-GLOB-TEMPO	CAMS-REG-TEMPO					

Click on "Versions" \rightarrow list of all available versions for an inventory

Many inventories have different versions – Some information is given on the available versions

Example for CAMS-GLOB-ANT

CAMS-GLOB-ANT	v5.1	v5.1 emissions from EDGARv5 up to 2015 ed with CEDSv2 values up to 2019	2020-01-01
	v5.2	v5.2 include ship emissions from CAMS-GLOB-SHIP v2.1 for EMPO v3.1	2021-06-01
	v5.3	v5.3 include update ship emissions from CAMS-GLOB-SHIP v3.1 (for 7 species)	2021-12-01
	v6.1	v6.1 based on EDGARv6 same methodology as v5.3	2022-10-01

Note: version 6.1 of CAMS-GLOB-ANT is not available for download yet, still under development

Metadata: for each dataset, you get metadata (here): they give important details of the dataset + the providers + references, etc.

Make sure you read the metadata before using a dataset

Catalogue Data	a &Tools Metadata Provider Statistics Admin English 🗸 🕄 🖉
	CAMS-GLOB-AIR CAMS-GLOB-ANT CAMS-GLOB-BIO CAMS-GLOB-OCE CAMS-GLOB-SHIP CAMS-GLOB-SOIL CAMS-GLOB-TEMPO Go to Data
CAMS V	CAMS-GLOB-TERM CAMS-GLOB-VOLC CAMS-REG-ANT CAMS-REG-TEMPO CoCO2-PED2018-ANT CoCO2-PED2021-ANT GFASv1.2 GFASv1.3 Export PDF
General Information	
Dataset name	CAMS-GLOB-ANT
Title	CAMS Global anthropogenic emissions
Release date	2023
Spatial coverage	Global [latmin:-90 latmax:90 lonmin:-180 lonmax:180]
spatial-resolution	0.1×0.1
Temporal coverage	Monthly / Yearly - Period 2000 to 2024
	Anthropogenic - 36 parameters
Parameters	Anthropogenic - 21 sectors
Versions/Scenarios	Versions/Scenarios (4) v5.1 (v5.1 emissions from EDGARv5 up to 2015 ed with CEDSv2 values up to 2019) v5.2 (v5.2 include ship emissions from CAMS-GLOB-SHIP v2.1 for EMPO v3.1) v5.3 (v5.3 include update ship emissions from CAMS-GLOB-SHIP v3.1 (for 7 species)) v6.1 (v6.1 based on EDGARv6 same methodology as v5.3)
Institute	Laboratoire d'Aérologie/CNRS - Toulouse - France NOAA - Earth System Research Laboratory - Boulder - United States Observatoire Midi-Pyrénées/CNRS - Toulouse - France
Contacts	Antonin Soulié (antonin.soulie@aero.obs-mip.fr) - Claire Granier (claire.granier@noaa.gov) - Nicolas Zilbermann (nicolas.zilbermann@obs-mip.fr) - Sabine Darras (sabine.darras@obs-mip.fr)
Restricted data	Visualization and download allowed
Abstract	
	In support of the CAMS global simulations, an inventory was developed for the years 2000-2020 for the atmospheric compounds included in the CAMS model. Emissions are provided for 12 sectors, depending on the species. The spatial resolution of the inventory is 0.1x0.1 degree. Emissions are provided as monthly averages. The data is based on the EDGARv4.3.2 annual emissions for the years 2000-2012 to which we apply the monthly temporal profiles from CAMS-GLOB-TEMPO. After 2012, the monthly emissions are extrapolated to the current year using linear trends fit to the years 2011-2014 from the CEDS global inventory.
	<u>comments (1)</u> Update bc and nmvoc v5.3 - April 2022

After clicking on "Data and Tools" (top left) \rightarrow link to the tools

To access the tools, a login is required → click on "Sign in with your ECCAD account" (even if you don't have yet an account)



After clicking on "Data and Tools" (top left) \rightarrow link to the tools

If you have and ECCAD account, enter login/password If you don't have an ECCAD account, click on "Not yet registered"



To register, fill the form: after entering name, email, password, the system asks for your institute – If your institute is not yet in the list, see next page



Registering a new institute: if your institute is not in the list, you can select "Create new institute" and fill the form.

ECCAD: En	ECCAD: Emissions of atmospheric Compounds and Compilation of Ancillary Data Making data accessible and providing tools for data analysis													
		Reg	ister											
	User		In	stitute										
Country * Chile Institute * Create new i	∽ nstitı ∽													
Full name 🔺 Short name	Full name													
Phone number	Phone number													
Zip code	Zip code													
City * State/Region	City State/Region													
Website	Website													
		Reg	ister		* Mandatory field									
Sign in Forgotten your password ?														

After you register, you get the following message on your screen

ECCAD: Emissions of atmospheric Compounds and Compilation of Ancillary Data Making data accessible and providing tools for data analysis Register User email is not confirmed. Please confirm your ECCAD account. If you don't receive the email shortly, please check your spam folder. By default, your will receive the following emails from eccad: - newsletters (new datasets, new catalogue updates and other ECCAD news) - download links - updates and errors from downloaded datasets Go to User -> Account to set messages options Sign in

Forgotten your password ?

After you register, you should receive the following email

This email address has been used to register to the ECCAD Portal

If you are the origin of the registration, please confirm your account by clicking on the following link

By default, you will receive the following emails from ECCAD:

- newsletters (new datasets, new catalogue updates and other ECCAD news)
- download links
- updates and errors from downloaded datasets

Go to User -> Account to set messages options

Click on the link and your account will be registered

The ECCAD analysis tools

Visualization Totals per country/region Comparisons Downloads

1st step: select a dataset \rightarrow click on "Data and tools"



Click on the dataset you want, or look at the different categories, names of datasets, groups of species, parameters, etc.

1st step: select a dataset \rightarrow click on "Data and tools"



Click on the dataset you want, or look at the different categories, names of datasets, groups of species, parameters, etc.

After the selection, click on the orange tab "Add", and the selected datasets will appear in the left column

The PAPILA (1st version) and other regional datasets are under "Regional datasets"

DATASETS 1	CATEGORIES	1 DATASET 14	SCENARIOS / VERSIONS	GROUPS 9	PARAMETERS 59
REGIONAL datasets	Anthropogenic	CNEA-3iA-GEAA	None	Greenhouse gases	CO2
		CR2-MMA	Ref	Reactive gases	CO2_bf
		DACCIWA	Ссс	Particles	CO2_ff
		DACCIWA-flaring	Ccc*	Heavy metals	СО
		DACCIWA2		Halogenated species	N2O
		EMEP		VOCs-Alka e y nes	CH4
		INEMA2.0-Chile		VOCs-Alcohols Acids	NOx
		L14-Africa		VOCs-Aldehydes Ketones	NMVOCs
		MIXv2		VOCs-Aromatics Others	SO2
		MPI-CNRS			BC
		PAPILA			OC
		REAS2.1			NH3

SECTORS 🖸 SPATIAL 🖸

COVERAGE 🖸

The ECCAD analysis tools: tutorial slides done with version 5.3 of the CAMS-GLOB-ANT emissions

In the selection tool: selection of CAMS-GLOB-ANT: dataset selected in the item "Datasets", version 5.3 selected in "Scenarios/versions", and click on the orange tab "Add" → The selected dataset is in the left column.

items 36 👼 Empty	← Add 36	3	Reset > CAMS > C	AMS-GLOB-ANT > v5.3	-		Q full-text search
Anthro-CAMS-GLOB-ANT-Glo-v5.3-	DATASETS	1	CATEGORIES (1)	DATASET 1		GROUPS (8)	PARAMETERS 36
Anthro-CAMS-GLOB-ANT-Glo-v5.3-	CAMS		Anthropogenic	CAMS-GLOB-ANT	V5.3	Greenhouse gases	CO2-excl-short-cycle
acids						Reactive gases	CO2-organic-cycle
Anthro-CAMS-GLOB-ANT-Glo-v5.3-						Particles	СО
Anthro-CAMS-GLOB-ANT-Glo-v5.3-BC						Halogenated species	CH4
Anthro-CAMS-GLOB-ANT-Glo-v5 3-						VOCs-Alka e y nes	N2O
benzene						VOCs-Alcohols Acids	NOx
Anthro-CAMS-GLOB-ANT-Glo-v5.3-						VOCs-Aldehydes Ketones	NMVOCs
butanes						VOCs-Aromatics Others	SO2
Anthro-CAMS-GLOB-ANT-Glo-v5.3-CHX							BC
Anthro-CAMS-GLOB-ANT-Glo-v5.3- chlorinated-HC							OC
Anthro-CAMS-GLOB-ANT-Glo-v5 3-CO							NH3
Anthra CAMAS CLOD ANIT CLOVE 2							Chlorinated-HC
	SECTORS 🛽	SPATIAL		-			

Draw a map: after the selection, click on "Map" and then click on the species you want to plot (here NOx)



By default, the map is drawn for the 1st year, 1st month of the dataset: here January 2000

To change the time/year of the plot, change it here

Draw a map: flux or total Default is flux (kg/m2/s). For a map in Tg/pixel, click here





Zoom: when the cursor in on the map, you can zoom or unzoom by clicking here



Adjust the color bar: to adjust the color bar, click here on the blue wheel CAMS-GLOB-ANT Anthro NOx - Sum Sectors - v5.3 - 2000-01 kg m-2 s-1 4.00e-8 4.00e-9 4.00e-10 4.00e-11 4.00e-12 4.00e-13 4.00e-14 4.00e-1 4.00e Options Colors 20 Palette rainbow Range Auto. 3.1996e-24 4.0022e-8 Max Min grid max : 4.00e-8 grid min : 3.20e-24

You can then select "Manual" for the range, and change the color range as you wish

Plot a single sector: click on the item "Sectors" \rightarrow you get a grey rectangle with the list of available sectors



Choose for example "Road Transportation"

Plot a single sector: you then get the emissions from road transportation only







You get the evolution of the global total emissions of NOx for the full 2000-2023 period

Time series and pies: for yearly averages, click here



You can also get the time series for one or more sectors by clicking on the list of sectors on the left

Time series for regions, for example Brazil and Rest of South America You can select "IMAGE – 26 regions" here and you get the choice of regions here



Time series for regions and sectors: you can also select several regions and sectors at the same time: here are Road, Residential, Industrial and Agriculture waste burning for Brazil and the Rest of South America



You can click on any of the legend of the plots here to hide/unhide the different curves



Time series for countries, for example Chile and Argentina You can select "GPW3-Countries" here and you get the choice of countries here



As for the regions, you can also make plots for the sectors Pies: click here to get the pies.

The pies give the percentage contribution of each sectors to the total emission for a country (here for Chile)

NOx	Time step Monthly Yearly Date 2000-01-01 -2023-01-01 Sector Sum Sectors flux (kg m-2 s-1) total (Tg)
Regions Select all Cayma Islands Central African Republic Chad Chile China Colombia Coorors Cook Islands Cook Islands Cotata Rica Croatia Cuba Cyprus Czech Republic Select all Sum Sectors (12) Refineries Ships Power generation Off Road transportation Read transportation Read transportation	CAMS-CLOB-ANT Anthro NOx v5.3 yearly yearly (2000-2023) Solid waste and waste water v5.3 - Chile: 0.01 % Agricultural waste burning v5.3 - Chile: 0.71 % Agriculture livestock v5.3 - Chile: 0.74 % Agriculture livestock v5.3 - Chile: 0.84 % Industrial process v5.3 - Chile: 18.24 % Power generation v5.3 - Chile: 32.49 %
 Industrial process Agriculture livestock Agriculture soils Agricultural waste burning 	Off Road transportation v5.3 -Chile: 0.53 %
	 Refineries v5.3 -Chile Off Road transportation v5.3 Road transportation v5.3 -Chile Agricultural waste burning v5.3 Solid waste and waste water v5 Solid waste and waste water v5

Note for the pies: you should unselect "Sum sectors", in the lower box on the left panel to get the contributions

As indicated here, the pie gives the contribution for the full period indicated here ______ and here ______ You need to adjust the period if you want just 1 year



Note for the pies: you should unselect "Sum sectors", in the lower box on the left panel to get the contributions

Comparison of datasets

Example of comparison between the NOx emissions from the PAPILA (1st version) dataset And the CAMS-GLOB-ANT_v5.3 dataset

1st step: select at least two datasets (here PAPILA and CAMS-GLOB-ANT)

ECCAD Catalogue Data & To	ools Metadata Poo	vider Statistics Adr	nin			
Select Map items 2 Empty Anthro-CAMS-GLOB-ANT-Glo-v5.3-	Time Somes Co	CATEGORIES	ets > PAPILA > NOx DATASET (1)	SCENARIOS / VERSIONS 1	GROUPS (1)	PARAMETERS 1
NOx Anthro-PAPILA-Sou-NOx	REGIONAL datasets	Anthropogenic	PAPILA	None	Reactive gases	NOx

Go to the "MAP" item and plot the CAMS-GLOB-ANT map

Click on Dataset (2) here and click on the PAPILA dataset here After doing this, you get the two plots for CAMS-GLOB-ANT and PAPILA You have to adjust the time for each plot so that you are sure to plot the same years



Make sure that both dataset provide the same time periods: for example PAPILA gives only yearly values, so you have to adjust CAMS-GLOB-ANT to yearly values and to the same years here.



To get a comparison of the maps, click on the orange tab here. Make sure you have the right map in (1) = Dataset (1) and in (2)

This is what you get: note that is is always better to make such map comparisons on a large screen. The comparison map adjusts to the smaller map



As for the other maps, you can adjust the color range by clicking on the blue wheel here You can do such maps by sectors as well.



The download item is here:

Catalogue Data	a &Tools Metadata Provide	r Statistics Admin		English 🗸
Select	Map Time Series Compa	re Download		
monoterpenes Anthro-CAMS-GLOB-ANT-0.1°-Glob Anthro-CAMS-GLOB-ANT-0.1°-Glob Anthro-CAMS-GLOB-ANT-0.1°-Glob NOx Anthro-CAMS-GLOB-ANT-0.1°-Glob	Dal -v5.3-N2O Dal -v5.3-NH3 Dal -v5.3-NMVOCs Dal -v5.3- Dal -v5.3-OC	O Monthly O Yearly D0-01-01 ♥ -2023-12-01 ♥ m Sectors ♥ T-2 s-1) O total (Tg)		
		Gridded NetCDF	files	
 NOx Select species 2 	Sum Sectors ✓ 1 file for full period (2000 - 2024) s ☑ Select sector ☑ □ 1 file / year period 2000 - 2023		Time step :MonthlySize :13 GB	
Species : NOx Sector : All				
Include TimeSeries CSV files All Total Grid Regional masks	15			
- GPW3 : Countries , Con - OCEANS : oceans and se	ntinents 🖿 - World : selected countries 🖿 - II eas 🖺, european seas 🖿 - Cities : 3 cities 🖿 , 2	∕IAGE2.4 : 26 regions 🖹, 40 regions 🖿 7 cities 📄 – GFED : 14 basis regions 🖥		

Information on download options

□ I agree with the following Data Policy

Before downloading data set from this database, we request that each user consult the relevant detailed information, which indicates the specific rights applicable to that particular data set. When using or displaying the dataset, the user is requested to indicate the corresponding citation:

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 4.2 (CAMS-REG-v4.2), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi:10.24380/0vzb-a387

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 5.1 business-as-usual 2020 (CAMS-REG-v5.1 BAU 2020), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi.org/10.24380/eptm-kn40

- Reviewer link to,,CAMS-REG snapshot dataset, for ESSD special issue on surface emissions,,

The download item is here and this is what you will see if you want to download CAMS



Information on download options

I agree with the following Data Policy

Before downloading data set from this database, we request that each user consult the relevant detailed information, which indicates the specific rights applicable to that particular data set. When using or displaying the dataset, the user is requested to indicate the corresponding citation:

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 4.2 (CAMS-REG-v4.2), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi:10.24380/0vzb-a387

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 5.1 business-as-usual 2020 (CAMS-REG-v5.1 BAU 2020), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi.org/10.24380/eptm-kn40

- Reviewer link to,, CAMS-REG snapshot dataset, for ESSD special issue on surface emissions,,

What you need to check before a download:

- Total size: here for one species = 13Gb. If you select the box "Select species", the file will have a size of 455 Gb
- You can select several species here



Information on download options

I agree with the following Data Policy

Before downloading data set from this database, we request that each user consult the relevant detailed information, which indicates the specific rights applicable to that particular data set. When using or displaying the dataset, the user is requested to indicate the corresponding citation:

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 4.2 (CAMS-REG-v4.2), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi:10.24380/0vzb-a387

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 5.1 business-as-usual 2020 (CAMS-REG-v5.1 BAU 2020), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi.org/10.24380/eptm-kn40

- Reviewer link to,, CAMS-REG snapshot dataset, for ESSD special issue on surface emissions,,

What you need to check before a download:

- Time period: you can adjust it here:



Information on download options

I agree with the following Data Policy

Before downloading data set from this database, we request that each user consult the relevant detailed information, which indicates the specific rights applicable to that particular data set. When using or displaying the dataset, the user is requested to indicate the corresponding citation:

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 4.2 (CAMS-REG-v4.2), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi:10.24380/0vzb-a387

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 5.1 business-as-usual 2020 (CAMS-REG-v5.1 BAU 2020), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi.org/10.24380/eptm-kn40

- Reviewer link to,, CAMS-REG snapshot dataset, for ESSD special issue on surface emissions,,

What you need to check before a download:

You need to acknowledge that you will use the reference indicated in the metadata.
 Please note that there is currently a problem with the references indicated in the download page, and please refer to the metadata.



Before downloading data set from this database, we request that each user consult the relevant detailed information, which indicates the specific rights applicable to that particular data set. When using or displaying the dataset, the user is requested to indicate the corresponding citation:

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 4.2 (CAMS-REG-v4.2), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi:10.24380/0vzb-a387

- Kuenen, J., Dellaert, S., Visschedijk, A., Jalkanen, J.-P., Super, I. and Denier van der Gon, H., 2021, Copernicus Atmosphere Monitoring Service regional emissions version 5.1 business-as-usual 2020 (CAMS-REG-v5.1 BAU 2020), Copernicus Atmosphere Monitoring Service [publisher], ECCAD [distributor], 2021 doi.org/10.24380/eptm-kn40

- Reviewer link to,, CAMS-REG snapshot dataset, for ESSD special issue on surface emissions,

After you click on :download" at the bottom of the page, you should receive an email saying that the dataset is being prepared.

You will then get the link for the download in your user space, here

Catalogue Data & To Select Map	Ols Metadata Provider Time Series Compare	Statistics Admin Download			Auglish V 3
Anthro-PAPILA-0.1*-South America -NOx	Time step Date 2014 Sector Sum O flux (kg m-2	© Yearly 01-01 √ 2016-01-01 √ Sectors √ (s-1) O total (Tg)	A		My Downloads Sign out
			Gridded NetCDF files		
NOX Select species Species : NOX Sector : All Include TimeSeries CSV files All Total Grid Regional masks · GPW3 : Countries Continents · OCEANS : oceans and seas • Information on download options	Sum Sectors Select sector Select	GE2.4 : 26 regions b , 40 regions b GFD : 14 basis regions b		Time step : Yearly Size : 11 MB	Readme
□ I agree with the following Data Po Before downloading data set dataset, the user is requested - N. Elguindi, C. Granier, S. Darras, C. When clicking on the Downloa The User shall take all relevant steps provided in the metadata files, and re commercial use whatsoever, direct or	From this database, we request to indicate the corresponding of Liousse,2018, Global anthropogenic p ad button, you agree with the sp to maintain the rights of the various Lic for to the ECCAD-AERIS portal as the indirect, of products provided by ECC	that each user consult the relevant d itation: rojected emissions, In Prepartion, 2018 becific product user constraints: ensors including those of the CNRS-INSU and service provider. The manner how each produ AD-AERIS.	ailed information, which indicates the s NES. In particular, he shall clearly mark on all co has to be referenced is explicitly written in the r	specific rights applicable to that particular data set. mmunications and distributed documents, the name and identif metadata file of the ECCAD-AERIS product. It's expressly agree	When using or displaying the ication of the various Licensors, whose list is i that the User shall refrain from any

Questions/issues?

Please send an email to:

- Claire Granier: <u>Claire.granier@aero.obs-mip.fr</u>
- Nicolas Zilbermann: nicolas.zilbermann@obs-mip.fr

Note that Sabine Darras is not working within the ECCAD group anymore (she is now at JRC), and nobody will answer if you send a message to her previous email