Deliverable 10.13: Third summary of the monitoring of access to ACTRIS data and user statistics

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Summary

This report focuses on the use of data during the first ACTRIS-2 period and gives an overview of the data accessed through the data centre over the period from 1st of January 2015 – 31th of December 2018. The activities within the ACTRIS Data Centre and provision of measurement data from the research infrastructure is on behalf of all the data originators (instrument principle investigators) and for the whole ACTRIS consortium. A high priority is serving a wide user community, both external and internal to the consortium. Some data sets range back to the year 2000, achieved through ACTRIS precursor-projects (EARLINET, EUSAAR, CLOUDNET, ACTRIS-1 and others).

Currently, ACTRIS data includes about 110 different atmospheric variables, comprising: about 80 different trace gases, 12 different in situ aerosol variables measured near the surface, 10 aerosol profile variables, 8 cloud profile variables. The measurements utilise almost 40 different methodologies with time resolution ranging from seconds to 1 week. Additionally, ACTRIS provides near real time data (NRT) from about 25 sites in this period. ACTRIS aerosol in situ data has been provided in NRT from 51 instruments distributed over 16 sites, and practically all ACTRIS cloud profile sites have provided data in NRT during this period. 17 aerosol profile sites have set up automatic transfer of NRT data to ICARE/AERIS and groups involved in JRA 3; this is in progress.

The users of ACTRIS aerosol profiles and in situ data are distributed worldwide. There are 2236 different access IDs from 72 countries, each of them accessing the data bases from 1 to numerous times since start of ACTRIS-2. In total, 56 314 measurement years of data have been downloaded over the reporting period from all instruments[1]. This is a large increase since last year; 33% in the number of countries, 44% in the number of years of downloaded data, and 66% in the access IDs compared to 2017. For aerosol profile data sets, there are 689 different access IDs from 58 countries accessing, downloading 15 479 yearly data sets. For ACTRIS in situ data, there are 850 different access IPs downloading data more than 40 276 years of data from 52 countries. From 2017, there is also user statics for cloud profile data available. In 2018, there are 529 different access IDs from 18 countries accessing, downloading 211 yearly data sets of cloud profile variables.

The metrics and information on the use of ACTRIS data should be interpreted in relation to the number of datasets provided, described in detail in the report "*D10.12 Third summary of the ACTRIS data offered by the ACTRIS Data Centre*". Some data sets offered through the data centre range back to the year 2000, achieved through ACTRIS precursor-projects (EARLINET, EUSAAR, CLOUDNET ACTRIS-1 and others), and some are new time series. This is relevant e.g. for the total years of data that are available for download.

Section 1 introduces the ACTRIS Data Centre and includes central definitions and links to core documents for ACTRIS data centre activity. Section 2.2 to 12.4 summarise the details on the access to each of the various variables archived in the topical data bases. Section 2.5 provides information the about use of the portal.

[1] *22 317 yearly data sets since 1 January 2015*

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1 Introduction and definitions

ACTRIS measurement data are available through the ACTRIS Data Portal http://actris.nilu.no. The data are handled in 3 highly specialised topic data repositories. By the start of ACTRIS-2, measurement data from about 60 sites and ~130 different atmospheric variables were included in the ACTRIS data centre (including instrument variables). The data curation is closely linked to the networking activities and to the calibration centres to facilitate and ensure standardized and comparable procedures throughout the infrastructure. By 31 December 2018, the ACTRIS data centre has been handling data from more than 90 sites and ~130 different atmospheric variables, of these ca 80 different trace gases, 12 different aerosol variables measured near the surface, 10 aerosol profile variables, and 8 cloud variables. The data result from ca. 40 different methodologies, both in situ and remote observations, with time resolution ranging from seconds to 1 week. All data are available from the ACTRIS portal: http://actris.nilu.no, except for 8 aerosol profile variables and 1 cloud profile variable which are available upon request.

The ACTRIS data portal is a metadata catalogue. Development, management and maintenance of the data flow to the ACTRIS data portal is a centralised task performed by NILU, and the portal has been up and running close to 100% of the time, 24/7. Figure 1 shows the main structure of the portal. The metadata catalogues are updated regularly, every night through various procedures, so that new data added to the topical data bases are available through the portal by the following day at the latest. The structure is flexible, e.g. to add and change access to topic databases, implementation of various password and registrations procedures etc.

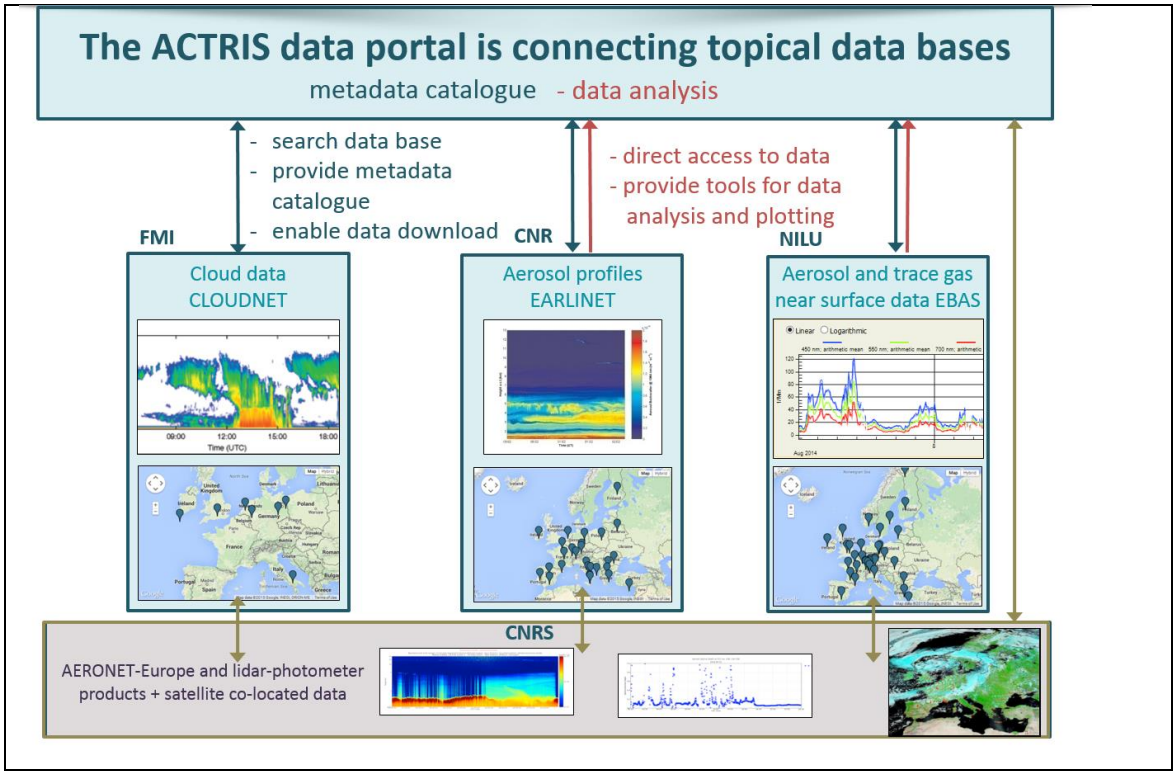

Figure 1: Overview of the core structure of the ACTRIS Data Centre.

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Updates of the portal development and work during ACTRIS-2 is summarized in the two deliverables "*D10.5: Documentation and release of new ACTRIS data portal versions with implementation of new functionalities and tools*" and "*D10.6 Documentation and release of second version of ACTRIS data portal with implementation of functionalities and tools*"

The data curation of the ACTRIS primary measurements data is organised in the 3 specialised data repositories:

- All cloud profile data are archived in the Cloudnet DB: http://cloudnet.fmi.fi/ under the responsibility of FMI.
- All aerosol profile data are archived in the EARLINET data base: http://access.earlinet.org/ under the responsibility of CNR
- All aerosol and trace gas in situ data are archived in EBAS: http://ebas.nilu.no/, under the responsibility of NILU

In addition, AERIS-ICARE is the forth topic database and offers satellite data support to facilitate products combining with ACTRIS ground data with Earth observation data.

All data repositories are linked via the ACTRIS data portal: http://actris.nilu.no/, and the ACTRIS measurements are also accessible also through the portal. Additionally, the portal provide access to secondary data. Secondary datasets are derived from primary measurement data by e.g. averaging, filtering of events, interpolation of data etc. Secondary datasets are usually the result of analysis for a targeted article, special studies or processed for model experiments. Primary datasets are regularly updated mainly due to extension of an additional year; secondary datasets are normally not updated over time.

1.1 Definitions and terms

The ACTRIS data management plan describes requirements and recommendations for ACTRIS data sets, the data flow, how the data is made available, and the data repositories. The data management plan includes a list with all ACTRIS atmospheric variables together with their recommended measurement methodology. The ACTRIS data policy and data management plan are available through the ACTRIS data portal.

Additionally, a document with central definitions has been produced to define ACTRIS data sets together with harmonised vocabulary and metrics across the ACTRIS Data Centre. This document is available at ACTRIS-2 Intranet (login is required).The following definitions will be used in this report:

- **One ACTRIS data set:** is one variable per year of measurement data with time resolution as defined in appendix 1 in the ACTRIS data management plan. The instrument has to comply with the recommendations and provide data for at least 75% if the total time defined there, over 1 year.
- **ACTRIS near real time data (NRT),** means preliminary data available within less than 3 h from the ACTRIS data Centre for in situ data, and for Cloud profile data, this is relaxed to be within one day.
- **Access and use of 1 data set**: The access of one data set: follow the definition of the data set above. A value of 1 is defined as accessing one full year of data. If a user only plots or downloads part of a year, this is a fraction of a year.

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2 Monitoring of access to ACTRIS data

This chapter provides an overview of the access to the ACTRIS data sets offered to all users by the ACTRIS data centre after 1th January 2015 and until 31st December 2018.

The monitoring of access of ACTRIS data aims to answer questions such as:

- What are the access and download numbers for the various ACTRIS data? How does this develop over time?
- What is the geographical distribution of users? And where is the most intensive use of ACTRIS data?
- Is the ACTRIS Data Portal used?

Only data sets accessed from the data bases, either through the ACTRIS Data Portal, or from the topical data bases, are monitored. The report includes an overview of the total access, and the access of the various variables. Both numbers of data sets accessed and downloaded are presented, in addition to the number of users, and their geographical distribution. Finally, user statistics and access to the ACTRIS Data Portal web site is included.

2.1 Overview of total access to ACTRIS data sets

Access to ACTRIS data through the databases EARLINET DB (aerosol profiles) and EBAS (aerosol and trace gas in situ data) have been monitored closely since the start of ACTRIS-2, and cloud profile data from CLOUDNET DB since 2017. The data sets available for access and download is described in detail in the report "*D10.12 Third summary of the ACTRIS data offered by the ACTRIS Data Centre*". Here, section 2.2, 2.3 and 2.4 summarise the details on the access to each of the various variables archived in the topical data bases.

The users of ACTRIS aerosol and cloud profile data, and in situ data are distributed worldwide. In the period between 2015-2018, 2236 unique client IPs from 72 different countries have downloaded data, each of them accessing the data bases from one to numerous times. Note that some large research institutes (e.g. NOAA in US) have 1 single IP for all users. The geographical distribution of users are shown in the map in

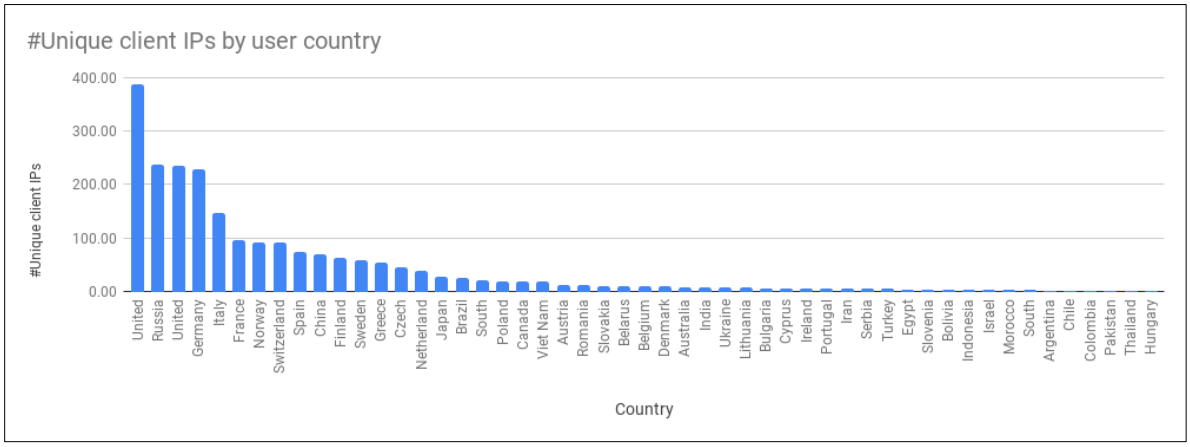

Figure 2.

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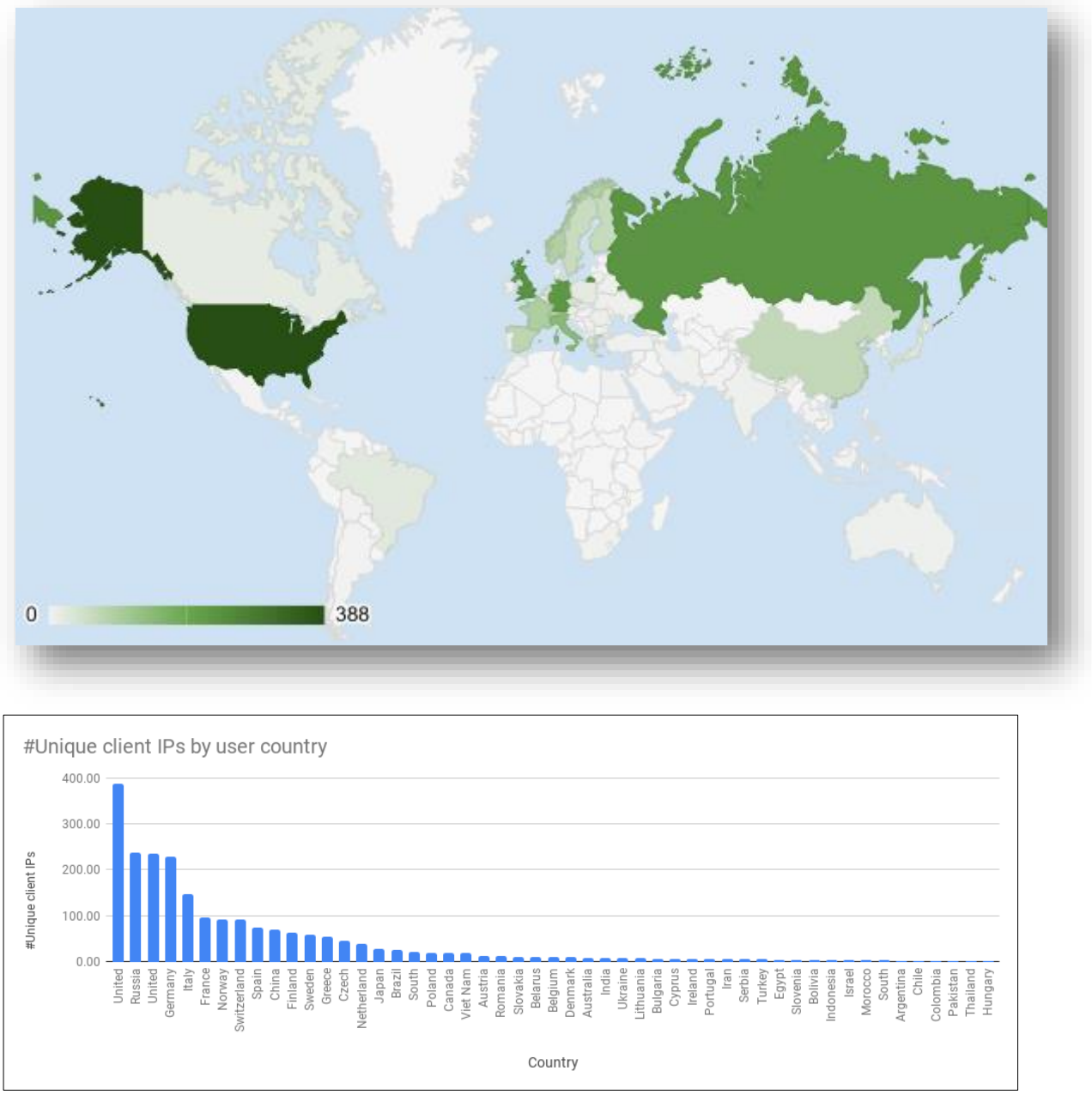

Figure 2: Geographical distribution of the 2236 unique client IPs downloading ACTRIS data in the period between 2015 and end of 2018, from 72 countries. Note, the map and bar chart does not include countries access less than one year of data. Shown as bars in the lower panel.

The most intensive use of ACTRIS data; the countries where there has been the most data downloaded since the start of ACTRIS-2, is shown in the map in Figure 3.

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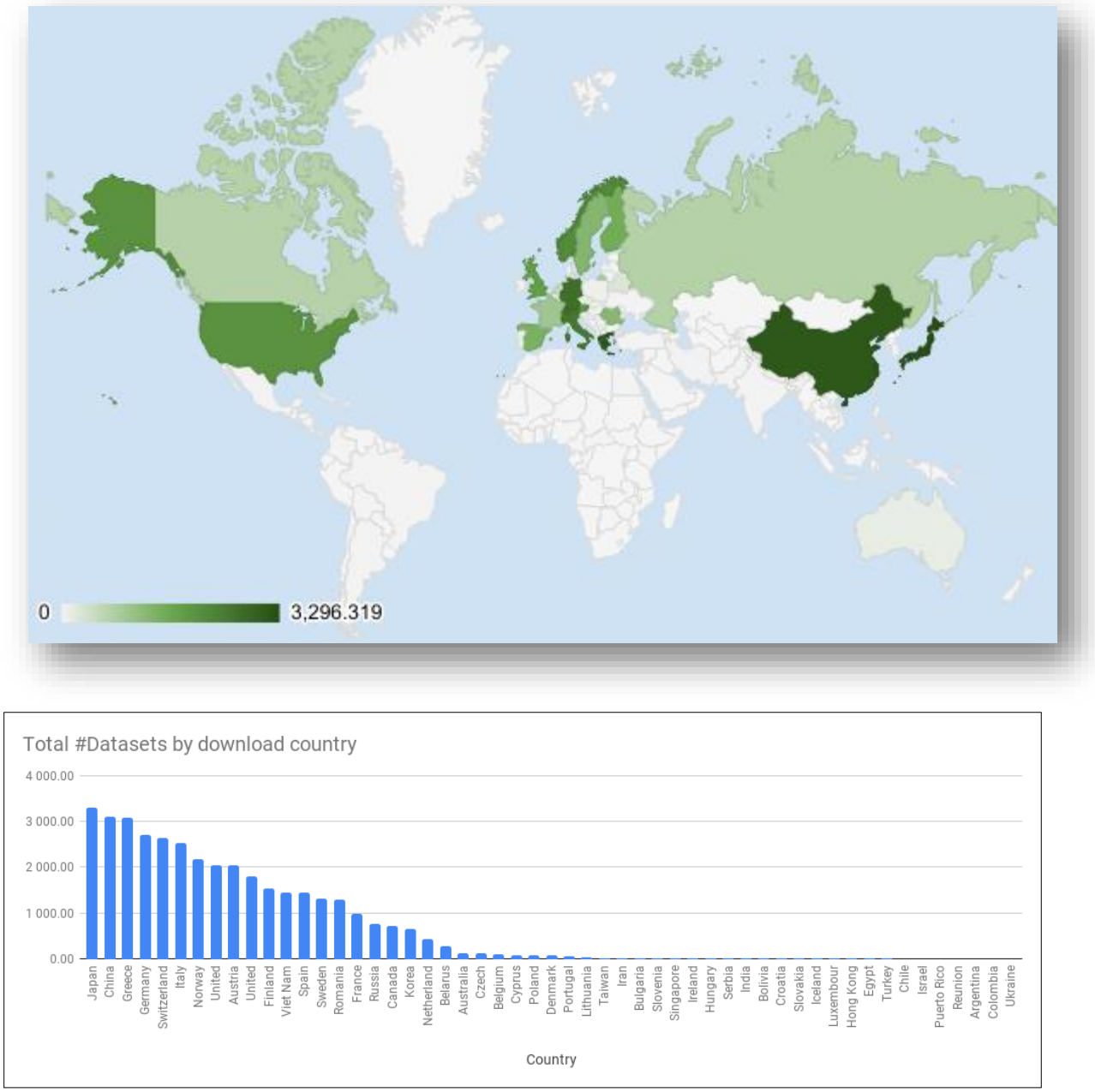

Figure 3: Geographical distribution of the countries with most intensive use, downloading most years of ACTRIS data in the period between 2015 and 2018. In total 56 314 full measurement years are downloaded, where of 18 304 years are delivered as tailored service (transfer 3 times per year) for Copernicus model validation. This is not included in the map, only the download thot the web interface reflecting the distribution of the users. Note, the map and bar chart does not include countries access less than one year of data. Shown as bars in the lower panel.

Figure 4 depict the monthly statistics of access to level 2 data. These metrics should be interpreted in relation to the number of datasets provided, described in detail in the report "*D10.12 Third summary of the ACTRIS data offered by the ACTRIS Data Centre*". Note also that some variables range back to the year 2000, and some are new time series. Figure 4 reports the total number of measurement years downloaded

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per month, in accordance with the required time resolution defined in the ACTRIS Data Management Plan (see section 1.1 for definitions). Note that the cloud profile data only has user metrics for this from 2017.

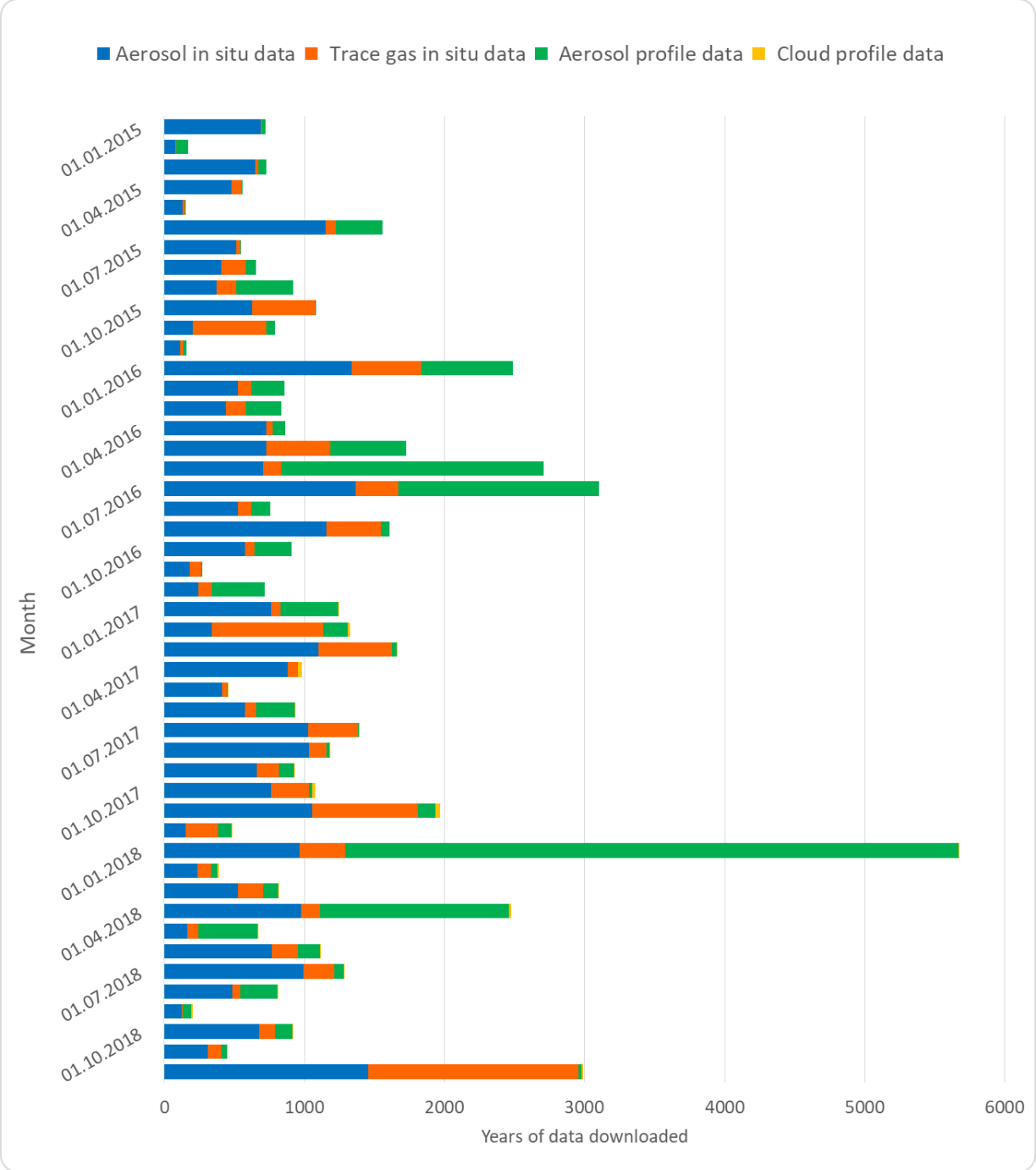

Figure 4: Number of years with level 2 data sets downloaded of ACTRIS aerosol profile data (green), aerosol in situ data (blue), trace gas in situ data (orange) and cloud profile data) yellow.

In total 56 314 measurement years of data have been downloaded from all instruments/methodologies, in the period between 2015 and 2018 (note that the number may vary slightly from the total number displayed in the geographical distribution; this is due to some traffic not being mapped to a specific

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country). The average number of measurement years of data downloaded each month is 1179, but the variation is large, and it is increasing over the period. Table 1 summarise the number years (different access IPs) of aerosol profile, and in situ data separately.

Table 1: Summary of access to ACTRIS data through the ACTRIS data portal, measurement years by category.

Overall Access # of years of downloaded data			
	Aerosol and trace gas in situ data	Aerosol profile data	Cloud profile data
Monthly average	849.74	319.08	8.82
Total years	40 787.47	15 315.60	211.67

The next sections summarise the total access, and access to aerosol profile, cloud profile, and in situ data separately. The metrics “INSPECT” and “PLOT” are included to illustrate data analysis performed in the web interface. At this stage, this information is only available for ACTRIS in situ data archived in EBAS.

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2.2 Monitoring of access to ACTRIS cloud profile data

Monitoring of access to the Cloudnet database. Due to technical issues, we only have user statistics from the Cloudnet database in the period after 2017-01-01, when downloads by country were recorded by the download API, hence these figures do not count all downloads. Note that quicklooks are generated on delivery to the database, and available to view immediately – in fact browsing quicklooks is the main activity before selecting data, with multiple quicklooks displayed on the same page; hence INSPECT and PLOT are not applicable in this context.

For cloud profile data sets, there were 529 different access IDs from 18 countries downloading 211 yearly data sets since start of 2017. UK and USA were the absolute largest users. The geographical distribution of the use and users of cloud profile data since 2017- 2018 is shown in Figure 5 and Figure 6.

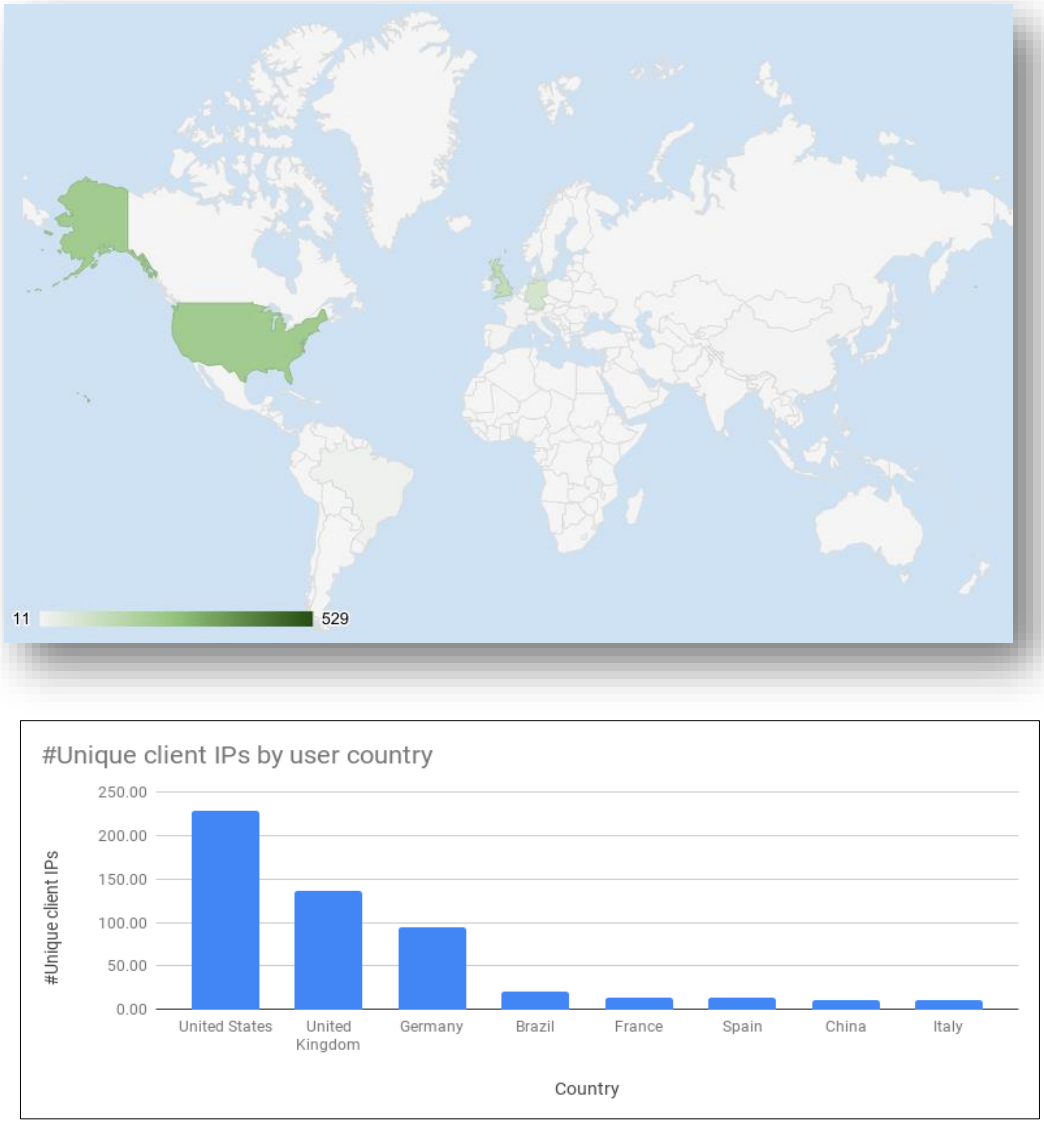

Figure 5: Geographical distribution of the 529 unique client IPs downloading cloud profile data over the period of 1st of January 2017 – end 2018. Shown as bars in the lower panel.

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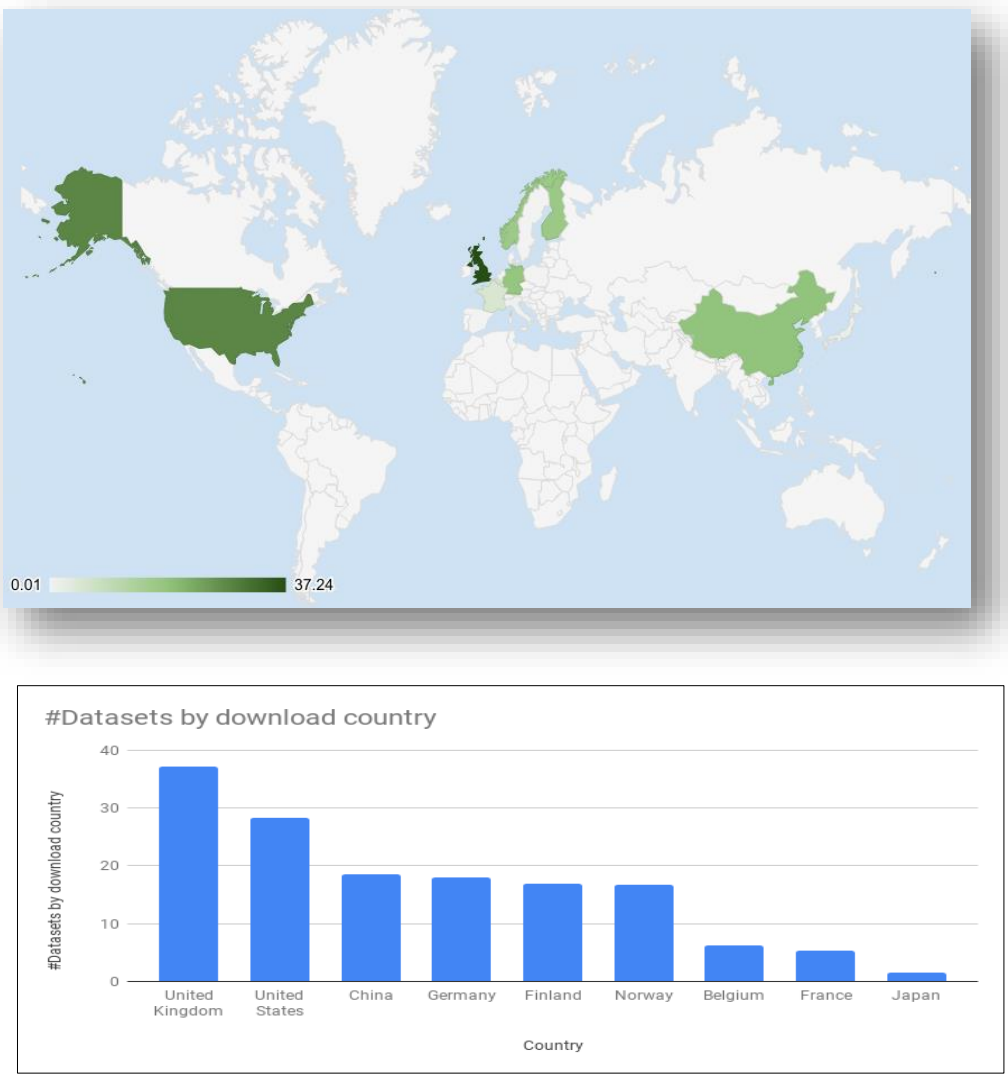

Figure 6: Geographical distribution of the: the countries with most intensive use downloading most years of data, 153 years in total, from 18 countries in the period 1st of January 2017 – end 2018. Shown as bars in the lower panel. Note, the chart is not including countries accessing less than one year of data.

Table 2: Summary of access to cloud product profiles. DOWNLOAD gives the numbers of measurement years of data downloaded. Note that values correspond to the period 2017-01-01 to 2019-01-01.

	INSPECT	DOWNLOAD	PLOT
Monthly average	Not available	8.8	Not available
Total	Not available	211	Not available
Time interval:		2018-01-01 - 2019-01-01	

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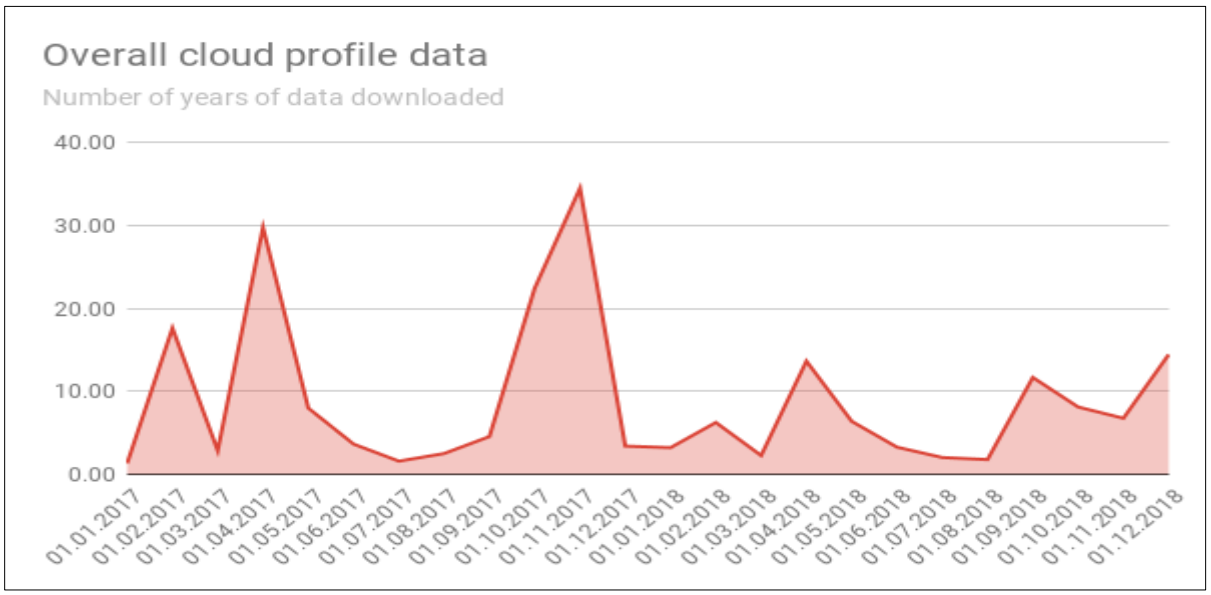

Figure 7: Monthly distribution of data access (2017-01-01 - 2019-01-01) by access type.

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2.3 Monitoring of access to ACTRIS aerosol profile data

For aerosol profile data sets, there are 689 different access IDs from 58 countries downloading 15478.8 yearly data sets since start of ACTRIS-2. The geographical distribution of the use and users of aerosol profile data since start of ACTRIS-2 are shown in the maps in Figure 9.

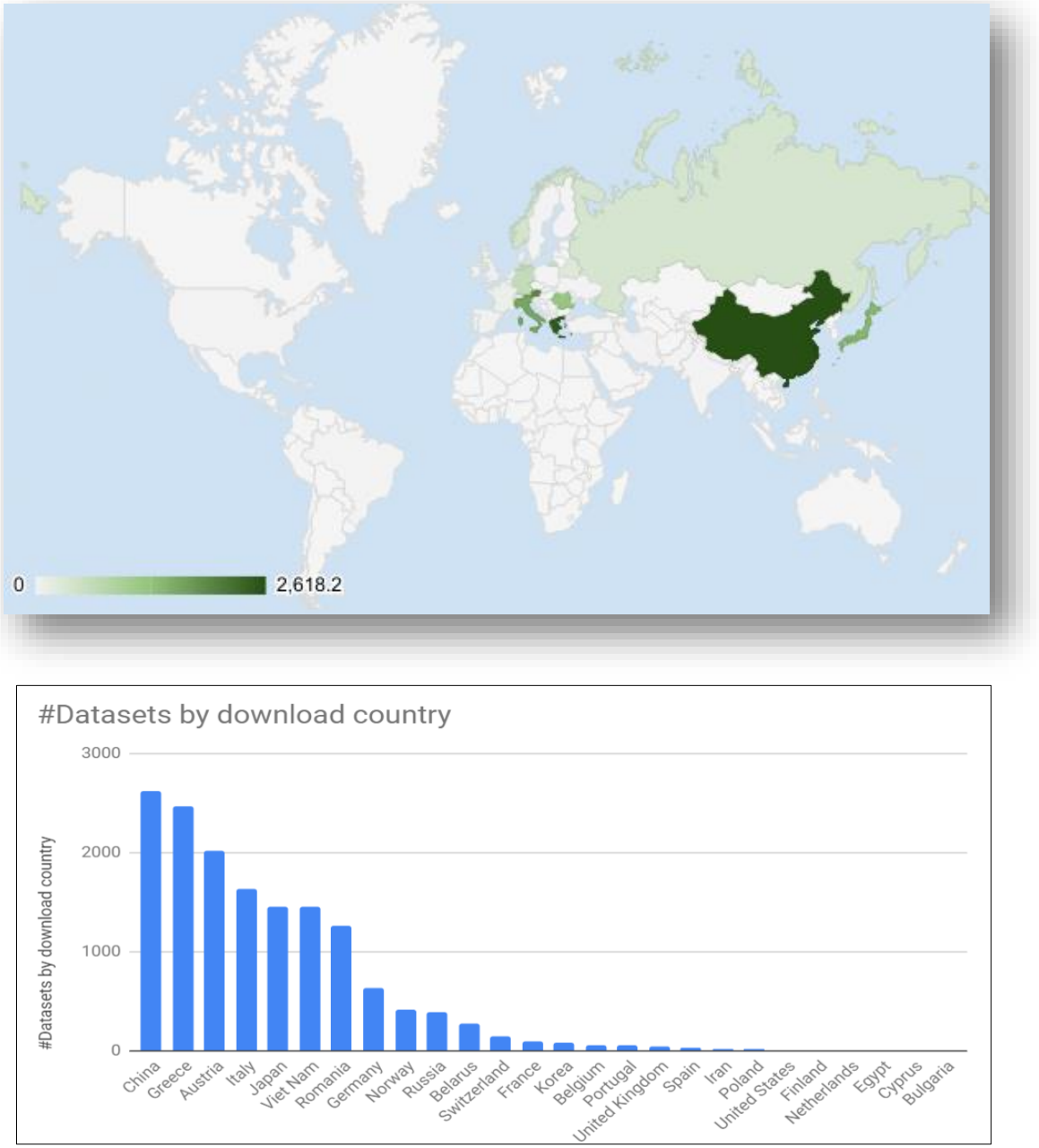

Figure 8: The countries with most intensive use, downloading most years of data, 15 478.8 years in total, from 58 countries in this period (2015-01-01 - 2019-01-01). Shown as bars in the lower panel. Note, the chart is not including countries accessing less than one year of data.

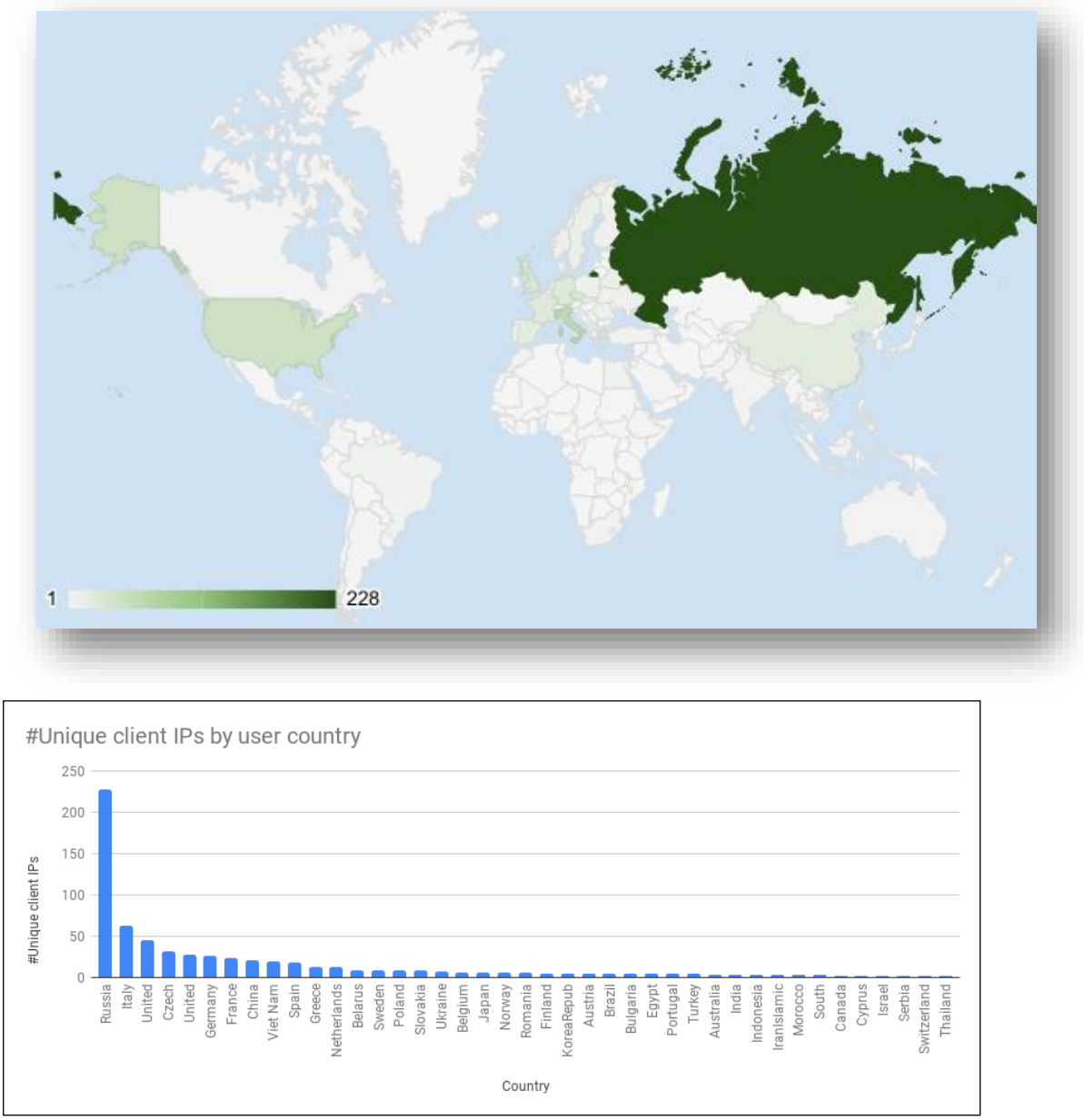

Figure 9: Overall geographical distribution of the 689 unique client IPs downloading aerosol profile data over the period of 1th of January 2015 – end 2018. Note, the map is not including countries access less than one year of data. Shown as bars in the lower panel.

The next sections describe the download of the various ACTRIS profile variables. These metrics should be interpreted in relation to the number of datasets provided, described in detail in the report "*D10.12 Third summary of the ACTRIS data offered by the ACTRIS Data Centre*". Note also that some variables range back ca the year 2000, and some are new time series.

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2.3.1 Monitoring of access to aerosol backscatter coefficient profile

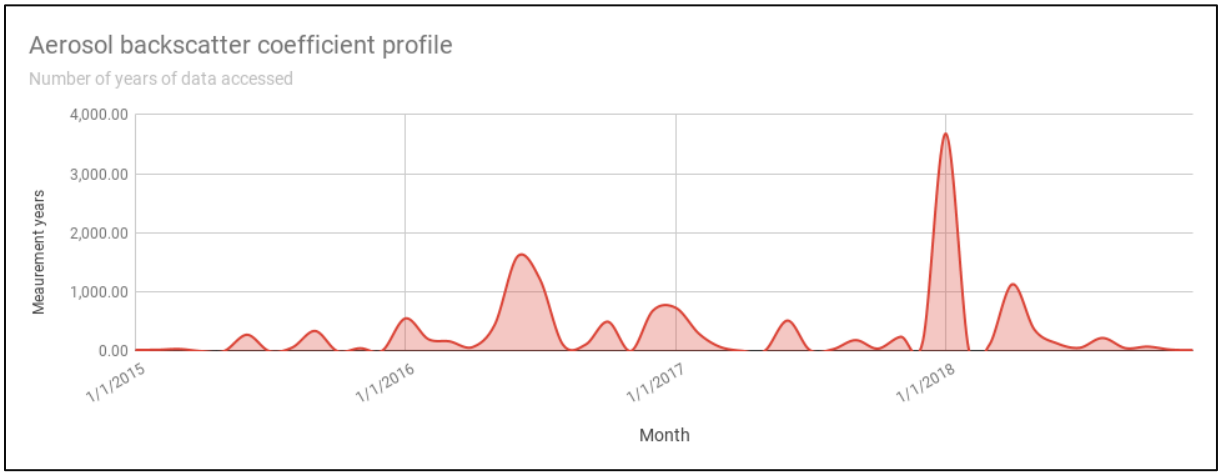

Figure 10: Aerosol backscatter coefficient profile. Monthly distribution of measurement years by access type.

Table 3: Monthly average and total years of download of ACTRIS aerosol backscatter coefficient profile. DOWNLOAD gives the number of measurement years of data downloaded.

Aerosol backscatter coefficient profile (2015-01-01 - 2019-01-01)			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	Na	307.28	Na
TOTAL YEARS	Na	14 749.60	Na

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2.3.2 Monitoring of access to aerosol extinction coefficient profile

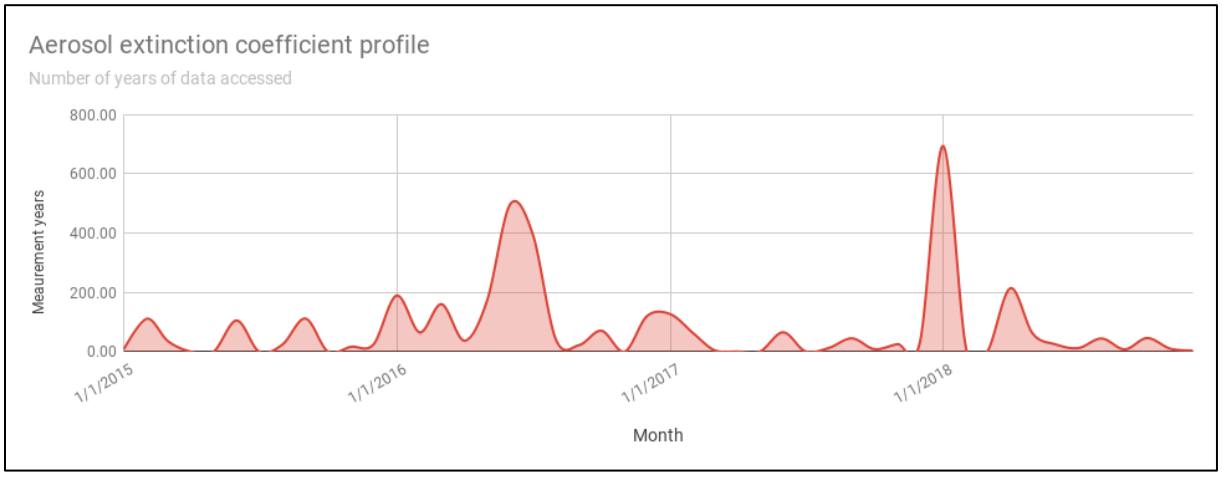

Figure 11: Aerosol backscatter coefficient profile. Monthly distribution of measurement years by access type.

Table 4: Monthly average and total years of download of ACTRIS Aerosol extinction coefficient profile. DOWNLOAD gives the number of measurement years of data downloaded.

Aerosol backscatter coefficient profile (2015-01-01 - 2019-01-01)			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	Na	77.60	Na
TOTAL YEARS	Na	3 724.60	Na

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2.4 Monitoring of access to ACTRIS in situ aerosol and trace gas data

For ACTRIS aerosol and trace gas in situ data sets, there are 950 unique client IDs downloading 40 276 years of measurement data located in 52 countries in the period between 2015 and 2019. The geographical distribution of the use and users of in situ data since start of ACTRIS-2 are shown in the maps and charts below.

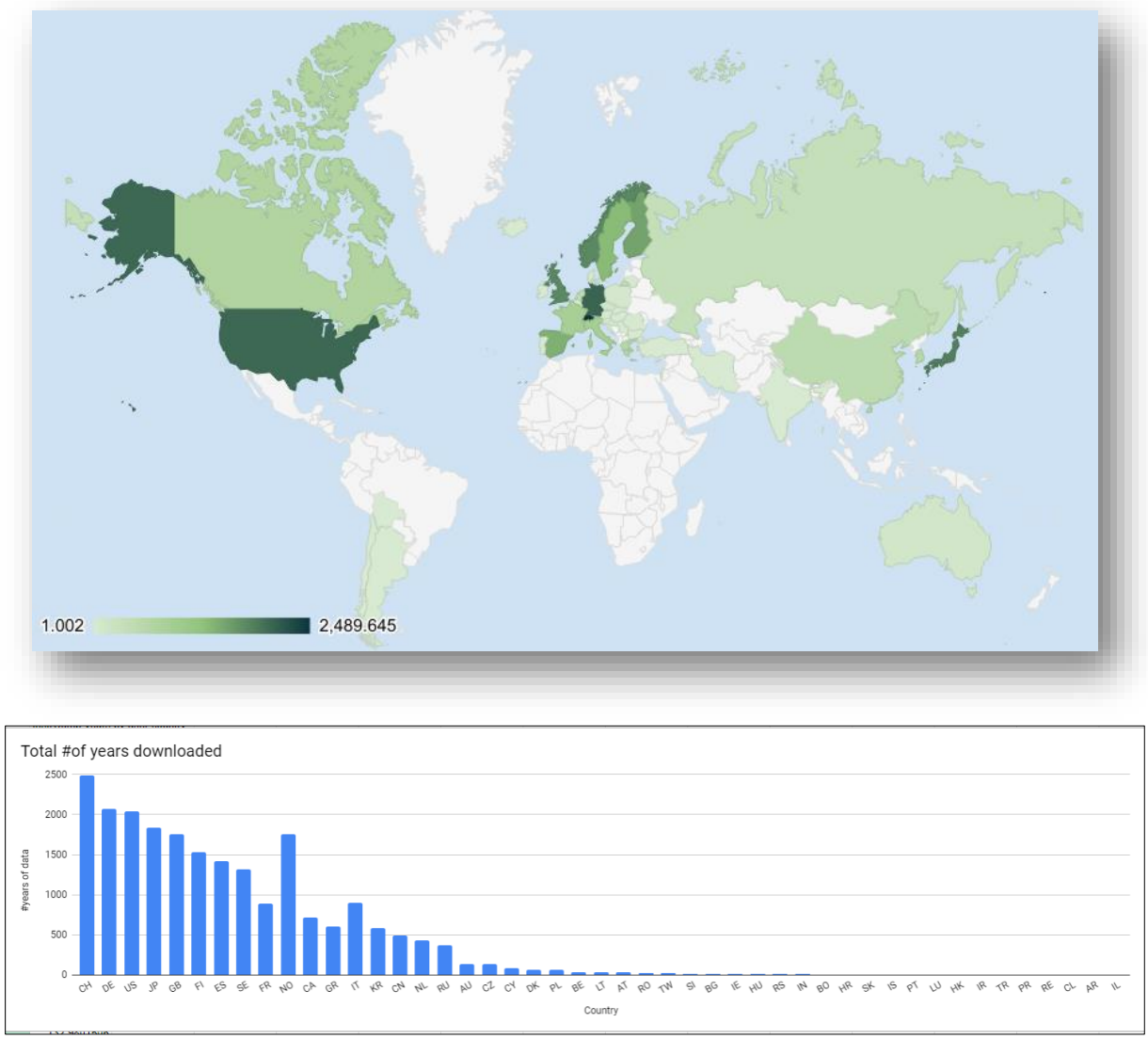

Figure 12: Upper panel: Overall geographical distribution of the countries downloading most years of ACTRIS in situ data in the period 2015-01-01 - 2019-01-01. On tailored data delivery service from EBAS is not included on the map (18 305 Comp-years of downloaded data). Note, the map is not including countries access less than one year of data. Shown as bars in the lower panel. Note, the chart is not including countries accessing less than one year of data. The tailored data delivery service from EBAS is the highest peak.

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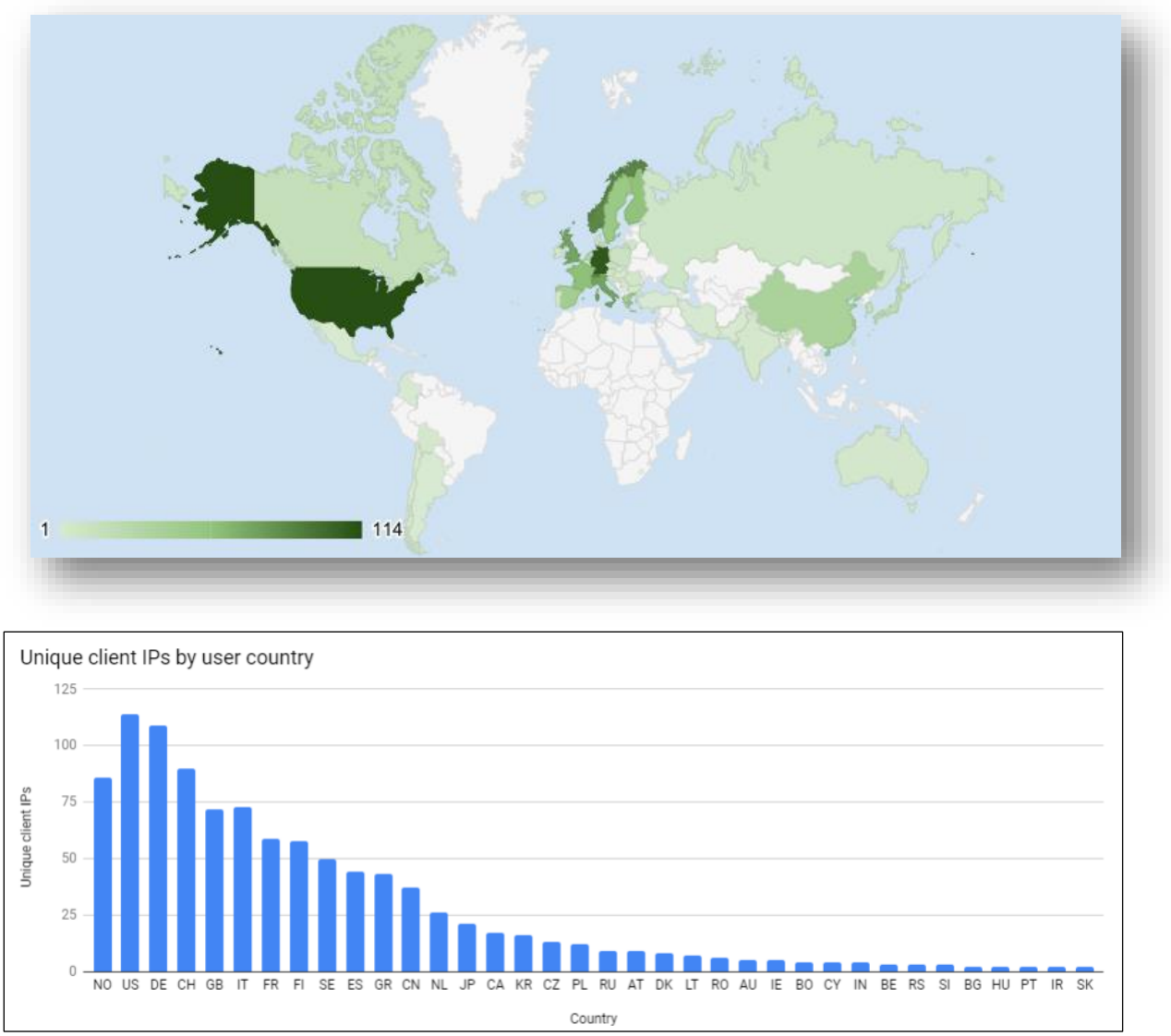

Figure 13; Upper panel: Overall geographical distribution of unique client IPs (2015-01-01 – 2019-01-01). Lower panel: Unique client IPs by user country (2015-01-01 – 2019-01-01). Note that the chart does not include countries with only one IP address accessing the data.

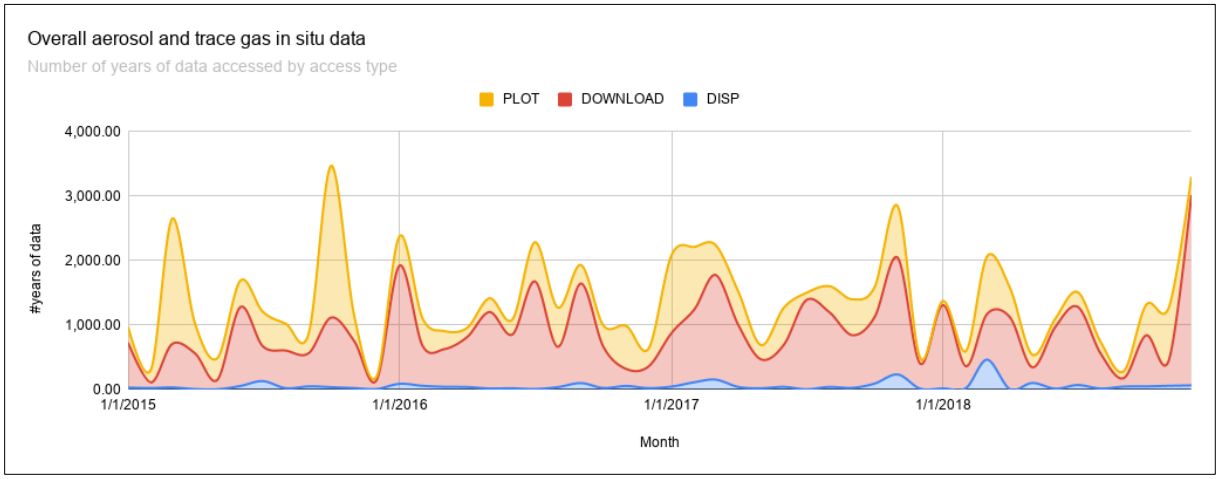

Figure 14: Monthly distribution of data access (2015-01-01 - 2019-01-01) by access type.

Table 5 Monthly average and total years of ACTRIS in situ aerosol and trace gas data by access type. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Overall aerosol and trace gas in situ data (2015-01-01 - 2019-01-01)			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	57.20	849.74	471.28
TOTAL YEARS	2,745.83	40,787.47	22,621.57

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The distribution of users and use of aerosol and trace gas in situ is shown separately below, as the geographical patterns is quite different.

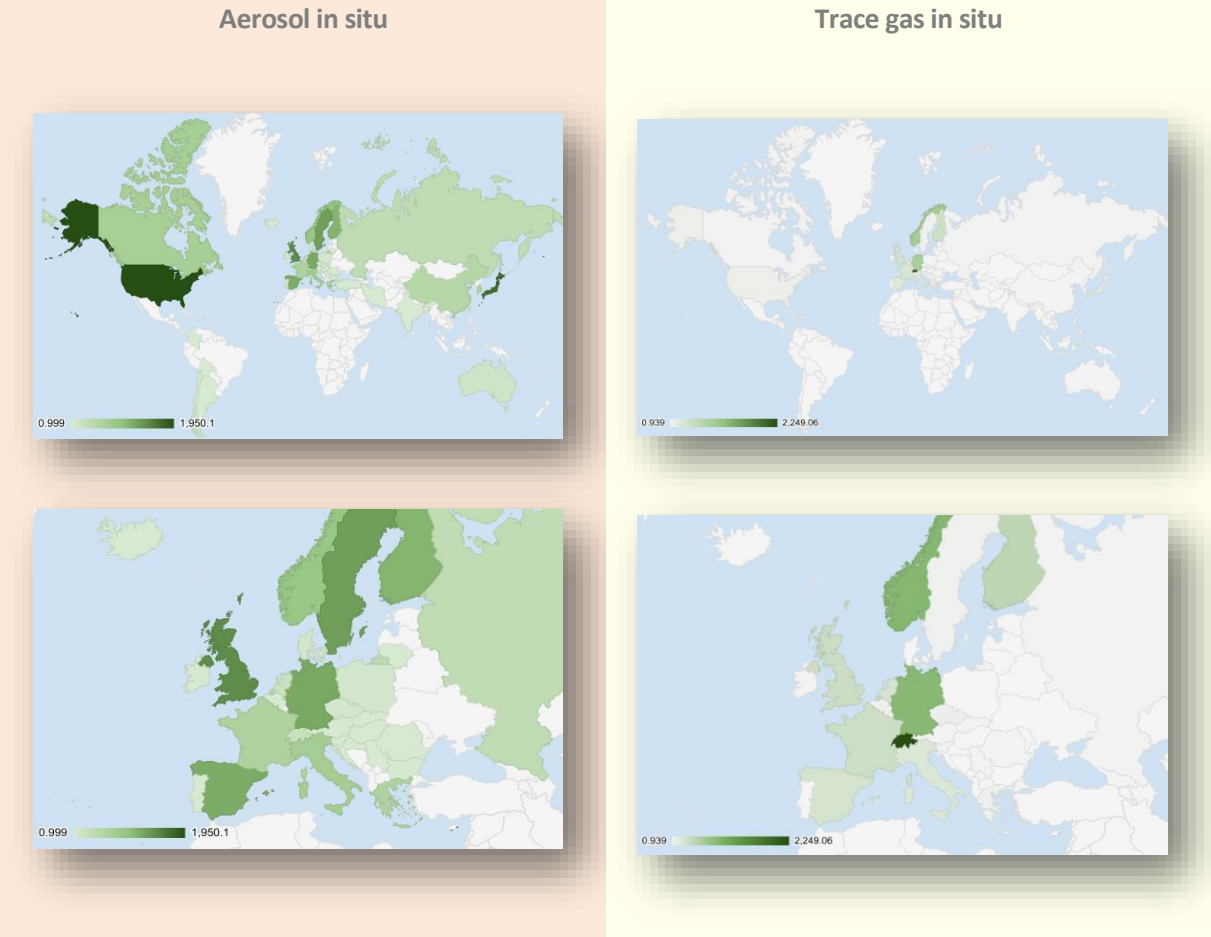

Figure 15: geographical distribution of the #of annual data sets downloaded of ACTRIS aerosol in situ data (Left column) and trace gas data (right column) both global and more details for Europe in the period 2015-01-01 - 2019-01-01

The overall numbers are summated in Table 6.

Table 6: The # of downloaded in situ data over the period 2015-01-01 - 2019-01-01.

Years of downloaded in situ data		
Aerosol in situ	30 101.62	74%
Trace gas in situ	10 429.13	26%

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2.4.1 Monitoring of access to aerosol light scattering coefficient

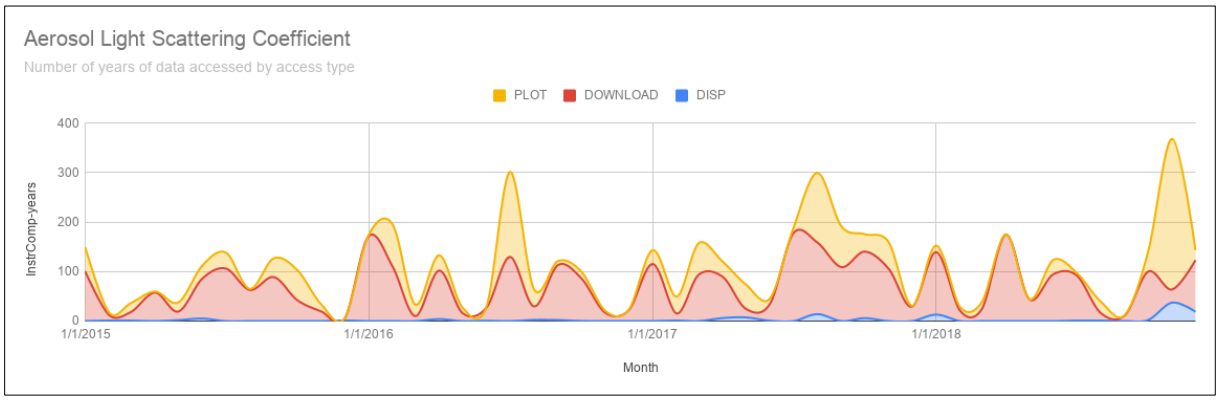

Figure 16 Aerosol light scattering coefficient. Monthly distribution of measurement years by access type

Table 7: Monthly average and total years of aerosol light scattering coefficient. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Aerosol Light Scattering Coefficient 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	2.68	69.29	34.50
TOTAL YEARS	128.81	3 325.73	1,656.17

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2.4.2 Monitoring of access to aerosol light backscattering coefficient

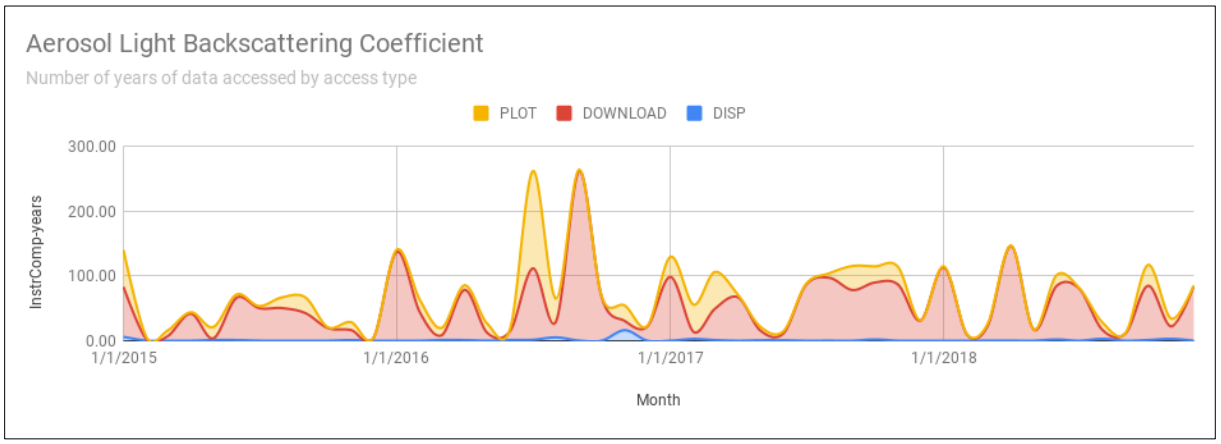

Figure 17: Aerosol light backscattering coefficient. Monthly distribution of measurement years by access type

Table 8: Monthly average and total years of aerosol light backscattering coefficient. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Aerosol Light Backscattering Coefficient 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
Monthly average	1.08	53.63	15.55
Total years	51.89	2 574.26	746.60

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2.4.3 Monitoring of access to particle number size distribution

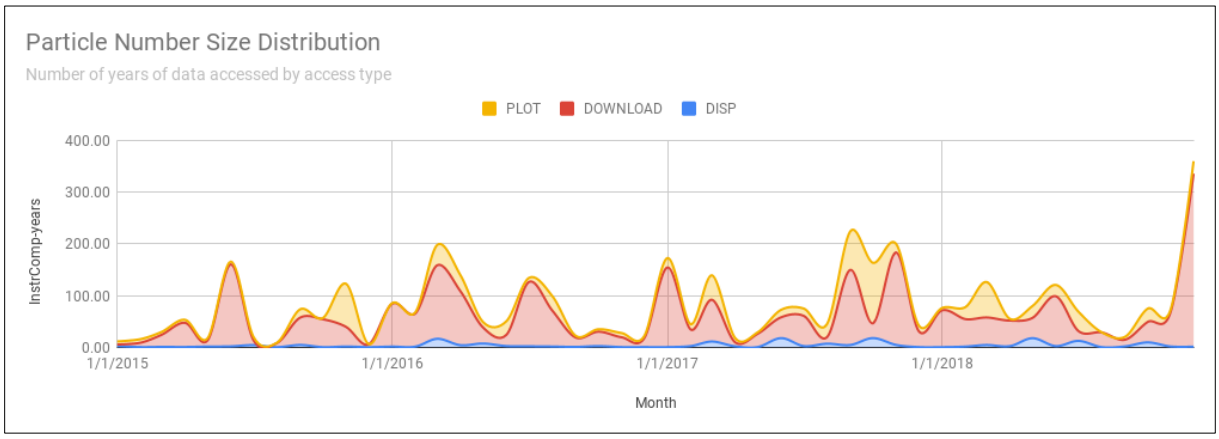

Figure 18: Particle number size distribution. Monthly distribution of measurement years by access type

Table 9: Monthly average and total years of access to particle number size distribution data. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particle Number Size Distribution 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
Monthly average	3.53	58.52	19.08
Total years	169.54	2 809.16	915.65

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2.4.4 Monitoring of access to particle light absorption coefficient

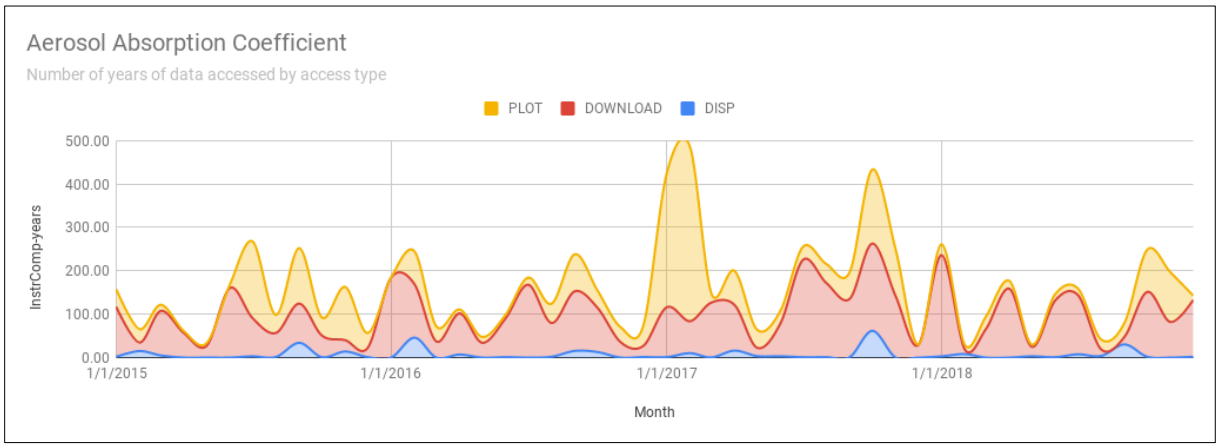

Figure 19: Particle light absorption coefficient. Monthly distribution of measurement years by access type

Table 10: Monthly average and total years of access to particle light absorption coefficient data. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particle light absorption coefficient (Aerosol Absorption Coefficient) 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	6.74	93.54	57.29
TOTAL YEARS	323.51	4 489.84	2,750.03

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2.4.5 Monitoring of access to particle number concentration

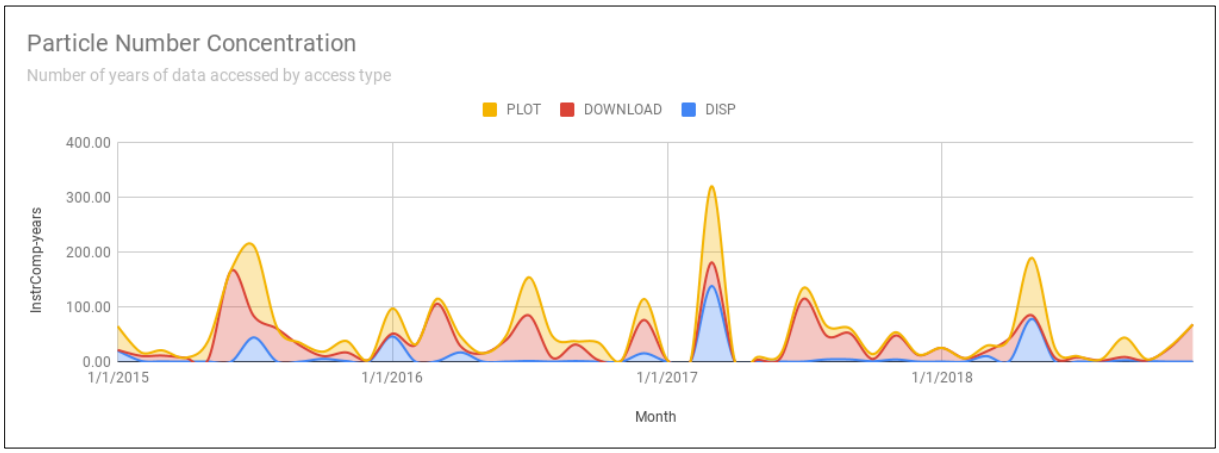

Figure 20: Particle number concentration. Monthly distribution of measurement years by access type

Table 11: Monthly average and total years of access to Particle Number Concentration data. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particle Number Concentration 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	8.26	26.40	19.13
TOTAL YEARS	396.57	1 267.32	918.24

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2.4.6 Monitoring of access to cloud condensation nuclei number concentration

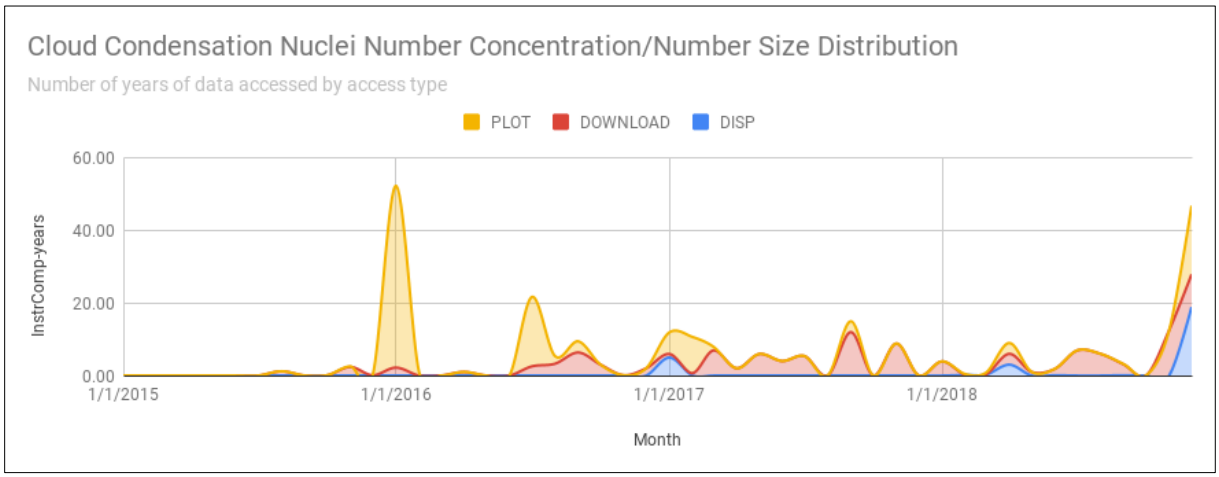

Figure 21: Cloud condensation nuclei number concentration. Monthly distribution of measurement years by access type

Table 12: Monthly average and total years of access to cloud condensation nuclei number concentration. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Cloud Condensation Nuclei Number Concentration (CCNC) 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	0.57	2.46	2.47
TOTAL YEARS	27.46	118.15	118.43

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2.4.7 Monitoring of access to hygroscopic growth factor

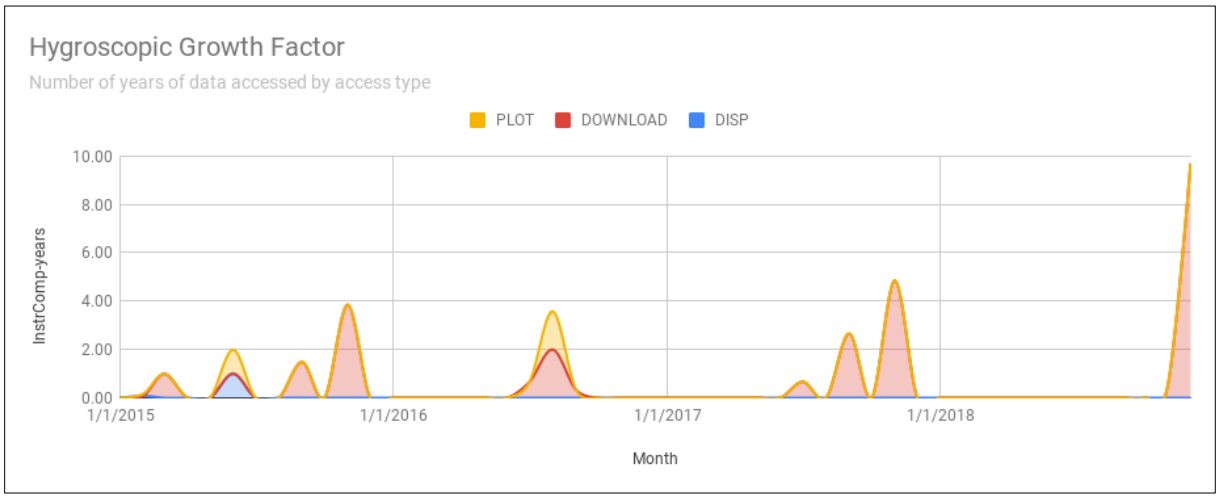

Figure 22: Hygroscopic growth factor. Monthly distribution of measurement years by access type

Table 13: Monthly average and total years of access to fygroscopic growth factor. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Hygroscopic Growth Factor (2015-01-01 - 2019-01-01)			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	0.02	0.58	0.06
TOTAL YEARS	1.08	27.78	2.66

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2.4.8 Monitoring of access to particulate organic and elemental carbon mass concentrations

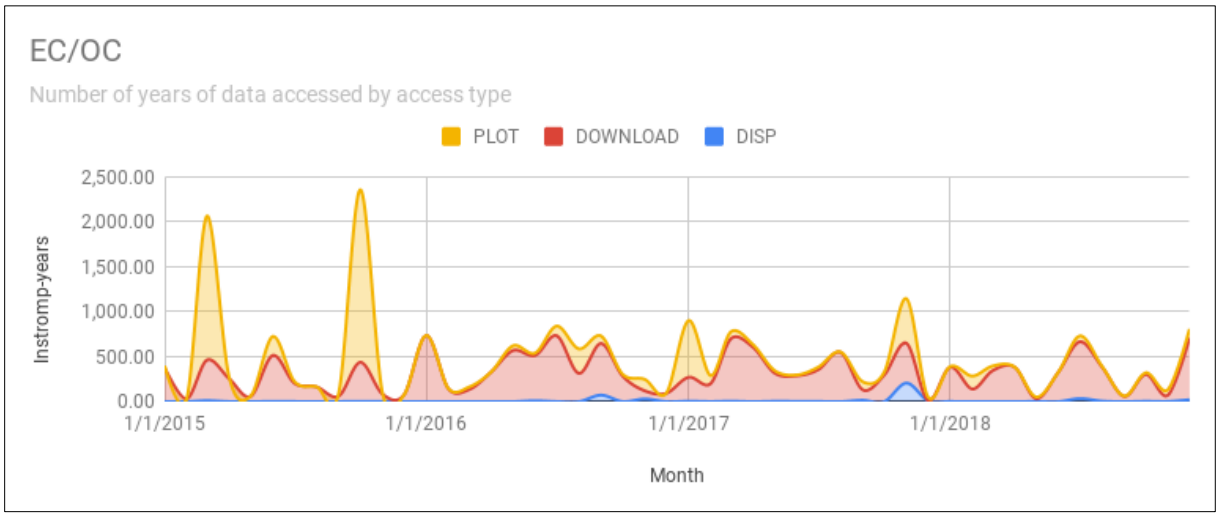

Figure 23: Organic and elemental carbon mass concentrations. Monthly distribution of measurement years by access type

Table 14: Monthly average and total years of access to organic and elemental carbon mass concentrations. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

EC/OC **2015-01-01 - 2019-01-01**			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	9.67	314.42	137.62
TOTAL YEARS	464.40	15 092.25	6 605.53

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2.4.9 Monitoring of access to particulate size-resolved chemical composition (organic & inorganic size-resolved mass speciation)

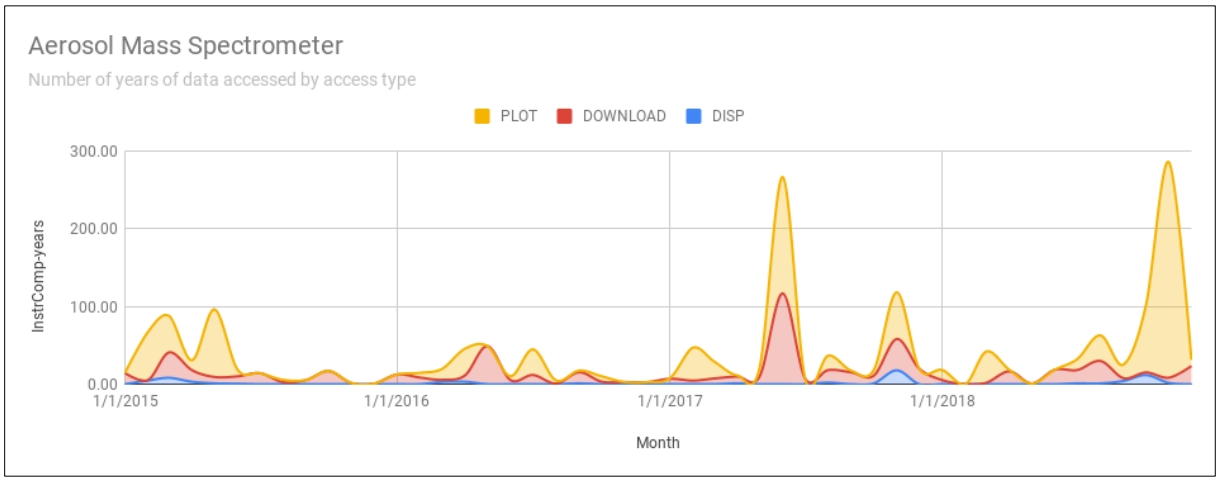

Figure 24: Particulate size-resolved chemical composition. Monthly distribution of measurement years by access type

Table 15: Monthly average and total years of access to particulate size-resolved chemical composition. Monthly distribution of measurement years by access type. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Aerosol Mass Spectrometer 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	1.37	13.15	23.58
TOTAL YEARS	65.84	631.34	1 131.73

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2.4.10 Monitoring of access to particulate levogluocsan mass concentration

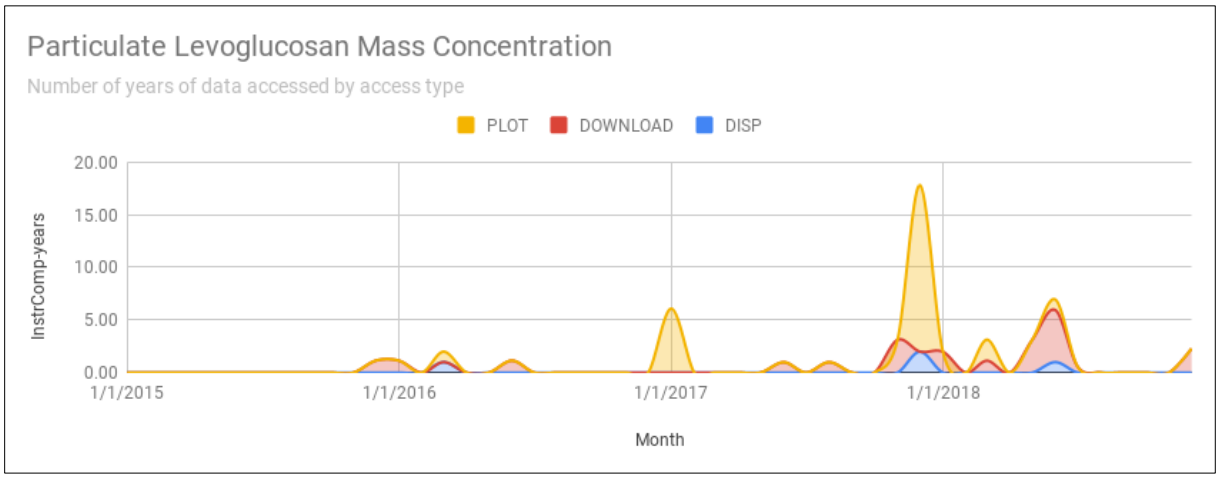

Figure 25: Levoglucosan. Monthly distribution of measurement years by access type

Table 16: Monthly average and total years of access to levoglucosan. Monthly distribution of measurement years by access type. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Particulate Levogluocsan Mass Concentration 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	0.08	0.47	0.54
TOTAL YEARS	3.99	22.53	25.88

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2.4.11 Monitoring of access to Volatile Organic Compounds – VOC

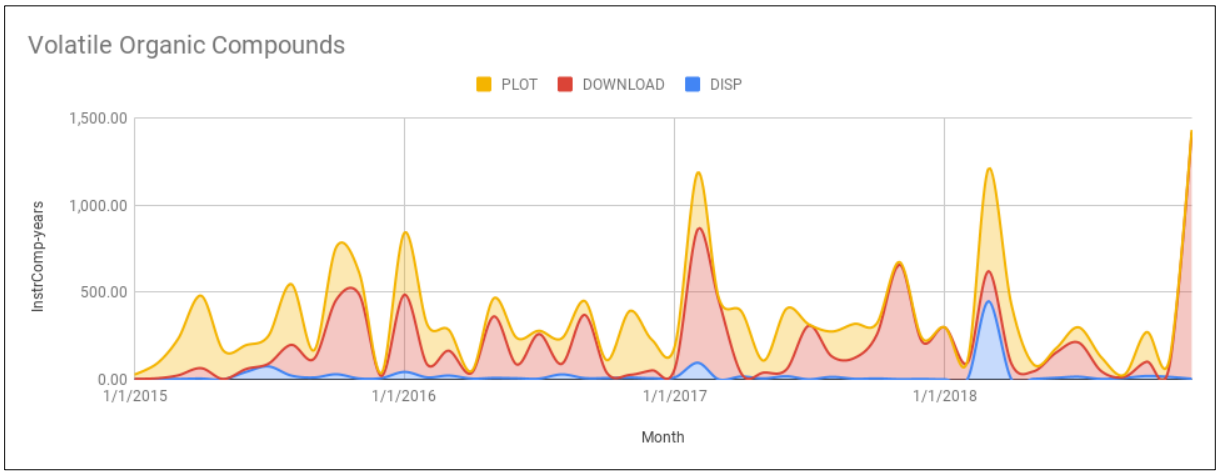

Figure 26: Volatile Organic Compounds – VOC. Monthly distribution of measurement years by access type

Table 17: Monthly average and total years of access to volatile Organic Compounds – VOC. Monthly distribution of measurement years by access type. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

Volatile Organic Compounds 2015-01-01 - 2019-01-01			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	21.89	185.78	145.43
TOTAL YEARS	1,050.86	8 917.41	6 980.69

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2.4.12 Monitoring of access to NOxy

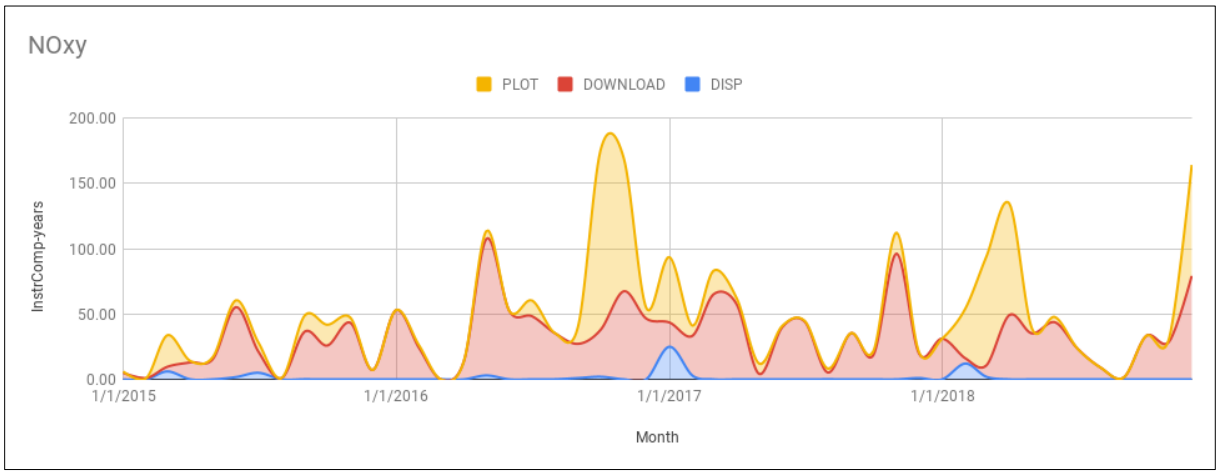

Figure 27: NOxy. Monthly distribution of measurement years by access type

Table 18: Monthly average and total years of access to NOxy . Monthly distribution of measurement years by access type. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

NOxy **2015-01-01 - 2019-01-01**			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	1.29	31.49	16.04
TOTAL YEARS	61.89	1 511.72	769.95

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2.4.13 Monitoring of access to Near Real Time (NRT) data archived in EBAS

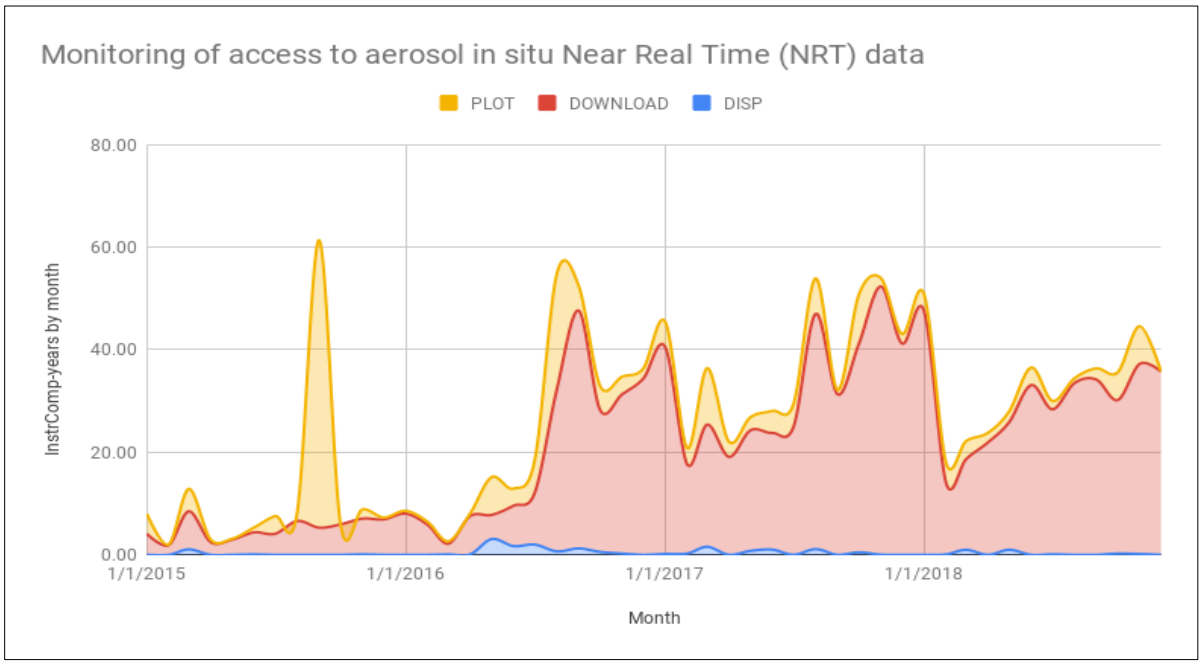

Figure 28: All aerosol in situ NRT data. Monthly distribution of measurement years by access type

Table 19: Monthly average and total years of access to aerosol in situ NRT data. Monthly distribution of measurement years by access type. DISP means number of measurement years where the measurement data have been inspected in the web interface, DOWNLOAD gives the number of measurement years of data downloaded, and PLOT is the measurement years plotted in the web interface.

NOxy **2015-01-01 - 2019-01-01**			
	DISP	DOWNLOAD	PLOT
MONTHLY AVERAGE	0.40	21.20	4.59
TOTAL YEARS	19.02	1 017.62	220.22

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2.5 Monitoring of access to ACTRIS Data Portal

There are around 600 unique visitors and approximately 900 visits on average each month. The ACTRIS Data Portal has had visitors from over 93 different countries, where The United States, Norway, France and Germany are among the most frequent visitors. In total there have been around 17 000 visits in the portal in the period between May 2015 until the end of 2017.

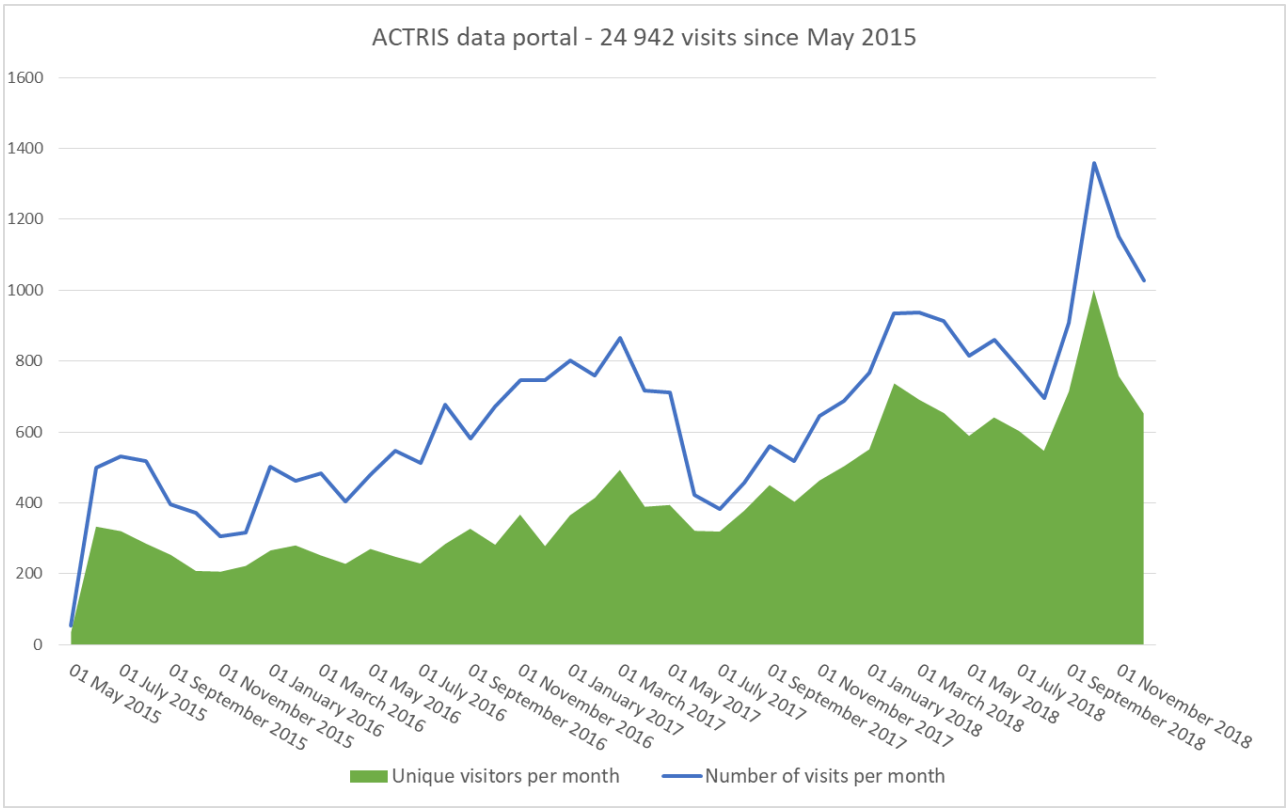

Figure 29: the monthly access evolution to ACTRIS Data Portal, both total visits (blue) and unique users (green). In total users from more than 60 countries visited the portal since ACTRIS started in May 2015.

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