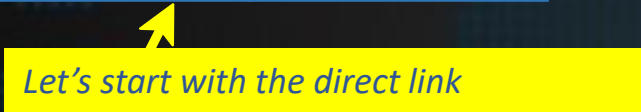


Let's explore the Exploitation Tool of the S2 Air Quality:

1) With the direct link to the S2 ET

<https://explorer.iride.adamplatform.eu>

 *Let's start with the direct link*

or

2) Starting from IRIDE Catalogue:

<https://dev-portal.irideservices.earth>

The User Guide is available on-line (icon )

Hands-on session (S2-01-01 web application)



SE-S2 Air Quality

Welcome to the IRIDE S2 Air Quality Service

User Guide available

The purpose is to support the operational users, in charge of the generation of the products and model outputs for the management of air quality in using EO based services, to improve air quality model results.

You are now on the web application that is a unique point of access for:

- (i) collecting and orchestrating air quality data from heterogeneous sources
- (ii) visualizing 2D air quality data maps
- (iii) disseminating forecast model output, co-located EO+ground data and re-analysis model output.

Available Case Studies:

S2-01 Data viewer
AQ Monitoring and Forecast data (Satellite, AQ model output, re-analysis results)

Login Required

S2 Products On-line Archive
3D AQ model output, AQ co-located Satellite&Ground-based Remote Sensing data, AQ re-analysis products

Login Required

S2 Jupyter Notebook
Time Series statistics on Air Quality model output

Login Required

LOGIN

Select login



Model the IRIDE capabilities. The IRIDE model is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic pursuant to Article 1 paragraph 2(a) of the Italian Law 98/2013 of 11 July 2013 in the framework of the project of the Italian Republic for the development of the national space programme. The IRIDE model is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic pursuant to Article 1 paragraph 2(a) of the Italian Law 98/2013 of 11 July 2013 in the framework of the project of the Italian Republic for the development of the national space programme. The IRIDE model is a programme of the European Union - Next GenerationEU funded by the Presidency of the Council of Ministers of the Italian Republic pursuant to Article 1 paragraph 2(a) of the Italian Law 98/2013 of 11 July 2013 in the framework of the project of the Italian Republic for the development of the national space programme.



Hands-on session (S2-01 ET data viewer)



SE-S2 Air Quality

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Login Required

S2 Jupyter Notebook
Time Series statistics on Air Quality model output

Login Required

Select to access the S2 Data viewer for 2D data visualization



Hands-on session (S2-01 ET data viewer)

The screenshot shows the iride SE-S2 Air Quality viewer interface. The main view is a satellite image of Earth centered on Europe. The top navigation bar includes the iride logo, logos for the European Union, Italiadomani, and ESA, and the text "SE-S2 Air Quality". On the right side of the top bar are icons for home, list, help, and user profile. Below the top bar, there is a "Geometries: 4" section with a list of four items: "Point_Romapoint.geojson Point #1", "Point_Modenapoint.geojson Point #1", "Point_Bolognapoint.geojson Point #1", and "Polygon_Italy.geojson Polygon #1". Three yellow arrows point to the first three items. A yellow callout box above the list contains the text: "1. Select Italy area and the desired points of interest to show the timeseries on those points". Another yellow callout box above the main map area contains the text: "You could also add new point. Design a polygon or upload new geometries (geojson files)". On the right side of the interface, there is a yellow callout box with the text: "You could also (from left to right): -come back to home - Read the User Guide - have information on the ET technology - have information on the user profile and extract the API Key and the Token". The bottom right corner of the interface shows a Bing logo.

Hands-on session (S2-01 ET data viewer)

SE-S2 Air Quality

34.87°N 17.60°W -4,076 m 4,530 km 198 Km

- Point_Romapoint.geojson Point #1
- Point_Bolognapoint.geojson Point #1
- Polygon_Italy.geojson Polygon #1

- Reanalysis-PM10_S2-03-02 0ug/m3
- Reanalysis-PM25_S2-03-02 0ug/m3
- Sentinel3-AOD_S2-01-01 0.003000000026077032
- Sentinel5p-CloudTopHeight-NRT_S2... 0
- Sentinel5p-CO-NRT_S2-01-02 0.013250847347000000
- Sentinel5p-HCHO-NRT_S2-01-02 -0.004252300000000000
- Sentinel5p-NO2-NRT_S2-01-02 0.00187957964933000000

Datasets: 21

You could also:

- zoom in/out
- Change the background layer
- Activate the terrain exaggeration up/down
- Spin the globe

Open the product list

Hands-on session (S2-01 ET data viewer) S2-01-02 Sentinel 5p NO2 (NRT)

SE-S2 Air Quality

34.87°N 17.60°W -4,076 m 4,530 km 198 Km

Available products on the Data Viewer

Product name	Dataset name on the ET Data viewer To visualize and download 2D data (.COG for maps and .csv for time series)
S2-01-01: S3-Satellite air quality data (EO ARD) From Sentinel 3 , not available on the Sentinel hub EO data sources as ARD.	Sentinel3-AOD_S2-01-01 (it includes historical and NRT data)
S2-01-02: S5p-Satellite air quality data (ARD) (from Sentinel 5p , not available on the Sentinel hub EO data sources as ARD)	Sentinel5p-O3-NRT_S2-01-02 / Sentinel5p-O3-OFFL_S2-01-02 Sentinel5p-CO-NRT_S2-01-02 / Sentinel5p-CO-OFFL_S2-01-02 Sentinel5p-HCHO-NRT_S2-01-02 / Sentinel5p-HCHO-OFFL_S2-01-02 Sentinel5p-NO2-NRT_S2-01-02 / Sentinel5p-NO2-OFFL_S2-01-02 Sentinel5p-SO2-NRT_S2-01-02 / Sentinel5p-SO2-OFFL_S2-01-02 Sentinel5p-cloudTopHeight-NRT_S2-01-02 / Sentinel5p-cloudTopHeight-OFFL_S2-01-02
kAIROS AQ forecast models visualization of 2D data and access to 2D and 3D data	2D data: kAIROS-model-PM10_S2-01-03 kAIROS-model-PM25_S2-01-03 kAIROS-model-NO2_S2-01-03
SVC-03 output (re-analysis products) visualization and dissemination	S2-03-01: Reanalysis-AQI_S2-03-01 Reanalysis-NO2_S2-03-01 Reanalysis-O3_S2-03-01 S2-03-02: Reanalysis-PM10_S2-03-02 Reanalysis-PM25_S2-03-02

Select a product: S5p NO2 NRT

Datasets: 21

Hands-on session (S2-01 ET data viewer) S2-01-02 Sentinel 5p NO2 (NRT)

Systematic product (NRT) over Italy, daily update.

31.63°N 16.38°W -4,438 m 4,484 km 196 Km

10/10 < Mar 11 2024 >

Point_Romapoint.geojson Point #1
Point_Bolognapoint.geojson Point #1
Polygon_Italy.geojson Polygon #1

Sentinel5p-NO2-NRT_S2-01-02
Polygon_Italy.geojson Polygon #1

Sentinel5p-NO2-NRT_S2-01-02
Point_Romapoint.geojson Point #1

Sentinel5p-NO2-NRT_S2-01-02
Point_Bolognapoint.geojson Point #1

Sentinel5p-NO2-NRT_S2-01-02
-0.000187957964353

Opacity: Colortable: 1. Close the Equalizer

Min: -0,0001879579 Max: 0,0015000562

Dataset Id Product Identifier

Datasets: 21 +

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

< 11 Mar 2024 >

Hands-on session (S2-01 ET data viewer) S2-01-02 Sentinel 5p NO2 (NRT)

iride  Systematic product (NRT) over Italy, daily update.

36.26°N 15.23°W -1.835 m 4,484 km 196 Km

Point_Romapoint.geojson Point #1
 Point_Bolognapoint.geojson Point #1
 Polygon_Italy.geojson Polygon #1

reanalysis-17m23_24-03-02
 Ouglm3

Sentinel3-AOD_S2-01-01
 0.630000000026077032 3.6766998767952783

Sentinel5p-CloudTopHeight-NRT_S2-01-02
 0 15445.0576171875

Sentinel5p-CO-NRT_S2-01-02
 0.013250847347000000 0.0055360002219677

Sentinel5p-HCHO-NRT_S2-01-02
 -0.004252300000000000 0.0048162126913666725

Sentinel5p-NO2-NRT_S2-01-02
 0.00187957904930000000 0.015000962416389585

Sentinel5p-O3-NRT_S2-01-02
 0.11450396478176117 0.24122172594070435

Sentinel5p-SO2-NRT_S2-01-02

Datasets: 21 +

3. Select another product

2. De-select the current product (or keep it selected if you want to overlap it with another map)

Here the zoomed-in the time series on Rome point



1	Point_Romapoint.geojson Point #1,"{'type': 'Point', 'coordinates': [
2	2024-03-02T11:27:48Z,0.00010758119606180117,
3	2024-03-02T11:32:48Z,0.0001075804975698702,
4	2024-03-02T13:12:48Z,5.12790575157851e-05,
5	2024-03-03T11:12:48Z,5.719166074413806e-05,
6	2024-03-03T12:52:48Z,5.978146873530932e-05,
7	2024-03-04T12:32:48Z,9.970846440410241e-05,
8	2024-03-05T12:12:48Z,0.0001664527808316052,
9	2024-03-06T11:52:48Z,7.000456389505416e-05,
10	2024-03-06T11:57:48Z,7.000520417932421e-05,
11	2024-03-07T11:37:48Z,9.909152140608057e-05,
12	2024-03-08T11:17:48Z,0.00011094669753219932,
13	2024-03-08T12:57:48Z,7.939992065075785e-05,
14	2024-03-09T10:57:48Z,0.0001042018920998089,
15	2024-03-09T12:37:48Z,8.076847734628245e-05,
16	2024-03-10T12:17:48Z,7.774506229907274e-05,
17	2024-03-10T12:22:48Z,7.774453843012452e-05,
18	2024-03-11T12:02:48Z,8.21558351162821e-05,

1. Download the .csv of the time series of the last 10 days

Hands-on session (S2-01 ET data viewer) S2-01-03 Reanalysis-PM25

iride

On-demand product (historical data) over Rome, Bologna and Modena.

44.05°N 10.02°E 2 m 228 km 9 Km

Point_Modenapoint.geojson Point #1
Point_Bolognapoint.geojson Point #1

Reanalysis-PM25_S2-03-02
Point_Modenapoint.geojson Point #1

Reanalysis-PM25_S2-03-02
Point_Bolognapoint.geojson Point #1

kAIROS-model-PM10_S2-01-03
0.197937056422335ppb vol 1357.1787109375ppb vol

kAIROS-model-PM25_S2-01-03
0.1185472384095192ppb vol 662.1163330078125ppb vol

Reanalysis-NO2_S2-03-01
0ug/m3 105.88943672607422ug/m3

Reanalysis-O3_S2-03-01
3.9089431762685312ug/m3 174.85813903808594ug/m3

Reanalysis-PM10_S2-03-02
0ug/m3 3.9143366576172ug/m3

Reanalysis-PM25_S2-03-02
0ug/m3 3.9143366576172ug/m3

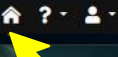
Sentinel3-AOD_S2-01-01
0.0030000000000000000 3.678989767852783

Datasets: 21

31 Dec 2020

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Come back to the home/landing page



Hands-on session (S2-01 AQ FORAIR-IT 3D model output)

3. Use the BACK button of the toolbar of your browser to come back to the On-line archive home page

← → ↻ 🔒 https://explorer.iride.adamplatform.eu/?use_case=2

Index of /ftp/ENEA/

3D/ 22-Nov-2023 13:08

1. access the S2-01 3D ENEA model output

Index of /ftp/ENEA/3D/

File Name	Date	Size
FARM_conc_g2_20231120_D1.nc	22-Nov-2023 12:47	12948511943
FARM_conc_g2_20231120_D2.nc	22-Nov-2023 13:08	12948511943
FARM_conc_g2_20231120_D3.nc	22-Nov-2023 13:18	12948511943
FARM_conc_g2_20231121_D3.nc	22-Nov-2023 12:33	12948511943
FARM_conc_g2_20231122_D1.nc	22-Nov-2023 10:24	12948511943
FARM_conc_g2_20231122_D2.nc	22-Nov-2023 10:39	12948511943
FARM_conc_g2_20231122_D3.nc	22-Nov-2023 10:59	12948511943

2. download the .nc file by selecting one of it

Hands-on session (S2-02 output)

Index of /ftp/SERCO/

./			
Historical data S2-02/	28-Feb-2024 15:29	-	
NRT S2-02/	28-Feb-2024 14:58	-	

Index of /ftp/SERCO/NRT_S2-02/

./			
AOD-satellite and groundbased S2-02-01/	28-Feb-2024 14:57	-	
Pollutants-satellite and groundbased S2-02-02/	28-Feb-2024 14:58	-	

Index of /ftp/SERCO/NRT_S2-02/Pollutants-satellite_and_groundbased_S2-02-02/

./			
CO-sat-gb S2-02-02/	07-Mar-2024 10:00	-	
HCHO-sat-gb S2-02-02/	07-Mar-2024 10:08	-	
NO2-sat-gb S2-02-02/	07-Mar-2024 13:39	-	
O3-sat-gb S2-02-02/	07-Mar-2024 10:04	-	
SO2-sat-gb S2-02-02/	07-Mar-2024 10:06	-	

./			
NO2-sat-gb-20240201 S2-02-02.geojson	29-Feb-2024 17:49	1628344	
NO2-sat-gb-20240201 S2-02-02.nc	29-Feb-2024 17:49	200689	
NO2-sat-gb-20240202 S2-02-02.geojson	29-Feb-2024 17:49	2207926	
NO2-sat-gb-20240202 S2-02-02.nc	29-Feb-2024 17:49	258153	
NO2-sat-gb-20240203 S2-02-02.geojson	29-Feb-2024 17:49	2243435	
NO2-sat-gb-20240203 S2-02-02.nc	29-Feb-2024 17:49	259665	
NO2-sat-gb-20240204 S2-02-02.geojson	29-Feb-2024 17:49	2326313	
NO2-sat-gb-20240204 S2-02-02.nc	29-Feb-2024 17:49	267289	
NO2-sat-gb-20240205 S2-02-02.geojson	29-Feb-2024 17:49	3520874	
NO2-sat-gb-20240205 S2-02-02.nc	29-Feb-2024 17:49	404209	
NO2-sat-gb-20240206 S2-02-02.geojson	29-Feb-2024 17:49	2093727	
NO2-sat-gb-20240206 S2-02-02.nc	29-Feb-2024 17:49	253281	
NO2-sat-gb-20240207 S2-02-02.geojson	29-Feb-2024 17:49	1738811	
NO2-sat-gb-20240207 S2-02-02.nc	29-Feb-2024 17:49	209489	
NO2-sat-gb-20240208 S2-02-02.geojson	29-Feb-2024 17:49	1538052	
NO2-sat-gb-20240208 S2-02-02.nc	29-Feb-2024 17:49	180441	
NO2-sat-gb-20240209 S2-02-02.geojson	29-Feb-2024 17:49	635148	
NO2-sat-gb-20240209 S2-02-02.nc	29-Feb-2024 17:49	94801	
NO2-sat-gb-20240210 S2-02-02.geojson	29-Feb-2024 17:49	134293	
NO2-sat-gb-20240210 S2-02-02.nc	29-Feb-2024 17:49	29685	
NO2-sat-gb-20240211 S2-02-02.geojson	29-Feb-2024 17:49	2061882	
NO2-sat-gb-20240211 S2-02-02.nc	29-Feb-2024 17:49	235553	
NO2-sat-gb-20240212 S2-02-02.geojson	29-Feb-2024 17:49	2066184	
NO2-sat-gb-20240212 S2-02-02.nc	29-Feb-2024 17:49	235721	
NO2-sat-gb-20240213 S2-02-02.geojson	29-Feb-2024 17:49	1979274	
NO2-sat-gb-20240213 S2-02-02.nc	29-Feb-2024 17:49	232025	
NO2-sat-gb-20240214 S2-02-02.geojson	29-Feb-2024 17:49	2136824	
NO2-sat-gb-20240214 S2-02-02.nc	29-Feb-2024 17:49	246937	
NO2-sat-gb-20240215 S2-02-02.geojson	29-Feb-2024 17:49	2444738	
NO2-sat-gb-20240215 S2-02-02.nc	9-Feb-2024 17:49	276425	
NO2-sat-gb-20240216 S2-02-02.geojson	9-Feb-2024 17:49	71272	
NO2-sat-gb-20240216 S2-02-02.nc	9-Feb-2024 17:49	24280	
NO2-sat-gb-20240217 S2-02-02.geojson	9-Feb-2024 17:49	2452333	
NO2-sat-gb-20240217 S2-02-02.nc	9-Feb-2024 17:49	280857	
NO2-sat-gb-20240218 S2-02-02.geojson	9-Feb-2024 17:49	1813820	
NO2-sat-gb-20240218 S2-02-02.nc	9-Feb-2024 17:49	216777	
NO2-sat-gb-20240219 S2-02-02.geojson	9-Feb-2024 17:49	2054273	
NO2-sat-gb-20240219 S2-02-02.nc	9-Feb-2024 17:49	235217	
NO2-sat-gb-20240220 S2-02-02.geojson	9-Feb-2024 17:49	2637649	
NO2-sat-gb-20240220 S2-02-02.nc	9-Feb-2024 17:49	325617	
NO2-sat-gb-20240221 S2-02-02.geojson	9-Feb-2024 17:49	3327679	
NO2-sat-gb-20240221 S2-02-02.nc	9-Feb-2024 17:49	391881	
NO2-sat-gb-20240222 S2-02-02.geojson	9-Feb-2024 17:49	1427689	
NO2-sat-gb-20240222 S2-02-02.nc	9-Feb-2024 17:49	179833	

NO2-sat-gb-20240224 S2-02-02.geojson		
NO2-sat-gb-20240224 S2-02-02.nc		
NO2-sat-gb-20240225 S2-02-02.geojson		
NO2-sat-gb-20240225 S2-02-02.nc		
NO2-sat-gb-20240227 S2-02-02.geojson		
NO2-sat-gb-20240227 S2-02-02.nc		

NO2-sat-gb-20240302 S2-02-02.geojson		
NO2-sat-gb-20240302 S2-02-02.nc		
NO2-sat-gb-20240303 S2-02-02.geojson		
NO2-sat-gb-20240303 S2-02-02.nc		
NO2-sat-gb-20240304 S2-02-02.geojson		
NO2-sat-gb-20240304 S2-02-02.nc		
NO2-sat-gb-20240305 S2-02-02.geojson		
NO2-sat-gb-20240305 S2-02-02.nc		
NO2-sat-gb-20240306 S2-02-02.geojson		
NO2-sat-gb-20240306 S2-02-02.nc		

```

20240302_NO2_1FA.geojson
File Modifica Visualizza
},
  "satellite_data": {
    "value": 2.33277e-05,
    "Long Name": "Vertical column",
    "Units": "mol m^-2",
    "_fillValue": 999.0
  },
  "satellite_data_uncertainty": {
    "value": 1.367718e-05,
    "Long Name": "Vertical column uncertainty",
    "Units": "mol m^-2",
    "_fillValue": 999.0
  },
  "inpa_data": {
    "value": 0.48,
    "Long Name": "In-situ concentration",
    "Units": "µg8hcg m^-3",
    "_fillValue": 999.0
  },
  "inpa_data_validity": {
    "value": 1.0,
    "Long Name": "In-situ concentration validity",
    "_fillValue": 999.0
  },
  "inpa_data_verification": {
    "value": 1.0,
    "Long Name": "In-situ concentration verification",
    "_fillValue": 999.0
  },
  "pandora_n_observations": {
    "value": 999.0,
    "Long Name": "Number of observations in the time interval",
    "_fillValue": 999.0
  },
  "pandora_data_mean": {
    "value": 999.0,
    "Long Name": "Mean vertical column",
    "Units": "mol m^-2",
    "_fillValue": 999.0
  },
  "pandora_data_std": {
    "value": 999.0,
    "Long Name": "Standard deviation of the mean vertical column",
    "Units": "mol m^-2",
    "_fillValue": 999.0
  }
}
    
```

5. Use the BACK button of the toolbar of your browser to come back to the On-line archive home page

4. Download the .nc or .geojson file by selecting one of it

← → ↻ 🏠 https://explorer.iride.adamplatform.eu/?use_case=2

Hands-on session (S2-02 output)

Open the downloaded product using QGIS and navigate through different satellite and ground-based co-locations

The screenshot shows the QGIS interface with a map of Italy. The map displays various cities and regions, with a yellow highlight on a specific location near the coast. The Identify Results panel on the right shows detailed metadata for the selected feature, including network name, site name, coordinates, and various data fields.

Feature	Value
NO2-sat-gb-20240304_S2-02-02	
network_name	Long Name: Acronym of the in-situ/ground-based network used in the record, value: SNPA
site_name	Long Name: Name/Identification code of the site of in-situ/ground-based network, value: IT1163A
longitude	Long Name: Longitude of the in-situ/ground-based network site, Units: degrees_east, value: 11.41639
latitude	Long Name: Latitude of the in-situ/ground-based network site, Units: degrees_north, value: 44.47222
satellite_sensing_time	Long Name: Time of observation as ISO 8601 date-time string (YYYY-mm-ddTHH:MM:SSZ), value: 2024-03-04T12:36:06Z
distance_site_pixel_center	Long Name: Distance between the in-situ/ground-based site and center of the satellite pixel, Units: km, value: 2.1538
satellite_data	Long Name: Vertical column, Units: mol m-2, _FillValue: 999, value: 0.0001456824
satellite_data_uncertainty	Long Name: Vertical column uncertainty, Units: mol m-2, _FillValue: 999, value: 8.414898e-05
snpa_data	Long Name: In-situ concentration, Units: ug m-3, _FillValue: 999, value: 11
snpa_data_validity	Long Name: In-situ concentration validity, _FillValue: 999, value: 1
snpa_data_verification	Long Name: In-situ concentration verification, _FillValue: 999, value: 3
pandora_n_observations	Long Name: Number of observations in the time interval centered on the satellite overpass, _FillValue: 999, value: 999
pandora_data_mean	Long Name: Mean vertical column, Units: mol m-2, _FillValue: 999, value: 999
pandora_data_std	Long Name: Standard deviation of the mean vertical column, Units: mol m-2, _FillValue: 999, value: 999
pandora_data_uncertainty	Long Name: Mean uncertainty of the vertical column, Units: mol m-2, _FillValue: 999, value: 999

Hands-on session (S2-03 re-analysis output)

Index of /ftp/ST/

../			
Combined-PM-reanalysis_S2-03-02/	28-Feb-2024 15:32	-	
Combined-trace-gases-reanalysis_S2-03-01/	28-Feb-2024 15:34	-	

Index of /ftp/ST/Combined-trace-gases-reanalysis_S2-03-01/

../			
Reanalysis-AQI_S2-03-01/	28-Feb-2024 15:41	-	
Reanalysis-NO2_S2-03-01/	28-Feb-2024 15:41	-	
Reanalysis-O3_S2-03-01/	28-Feb-2024 15:41	-	

Index of /ftp/ST/Combined-trace-gases-reanalysis_S2-03-01/Reanalysis-NO2_S2-03-01/

../			
Reanalysis-NO2_S2-03-01_nc/	29-Feb-2024 10:24	-	
Reanalysis-NO2_S2-03-01.tif/	29-Feb-2024 09:41	-	

Index of /ftp/ST/Combined-trace-gases-reanalysis_S2-03-01/Reanalysis-NO2_S2-03-01/Reanalysis-NO2_S2-03-01_nc/

../			
2018/	29-Feb-2024 10:24	-	
2019/	29-Feb-2024 10:24	-	

Hands-on session (S2-03 re-analysis output)

Index of /ftp/ST/Combined-trace-gases-reanalysis_S2-03-01/Reanalysis-NO2_S2-03-01/Reanalysis-NO2_S2-03-01_nc/

../			
2018/	29-Feb-2024 10:24	-	
2019/	29-Feb-2024 10:24	-	

1

Index of /ftp/ST/Combined-trace-gases-reanalysis_S2-03-01/Reanalysis-NO2_S2-03-01/Reanalysis-NO2_S2-03-01_nc/2018/

../			
01/	29-Feb-2024 10:24	-	
02/	29-Feb-2024 10:24	-	
03/	29-Feb-2024 10:24	-	
04/	29-Feb-2024 10:24	-	
05/	29-Feb-2024 10:24	-	
06/	29-Feb-2024 10:24	-	
07/	29-Feb-2024 10:24	-	
08/	29-Feb-2024 10:24	-	
09/	29-Feb-2024 10:24	-	
10/	29-Feb-2024 10:24	-	
11/	29-Feb-2024 10:24	-	
12/	29-Feb-2024 10:24	-	

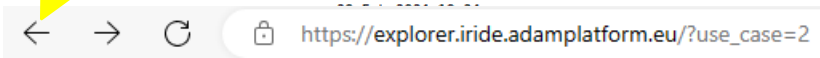
2

Index of /ftp/ST/Combined-trace-gases-reanalysis_S2-03-01/Reanalysis-NO2_S2-03-01/Reanalysis-NO2_S2-03-01_nc/2018/09/

../			
01/	29-Feb-2024 10:24	-	
02/	29-Feb-2024 10:24	-	
03/	29-Feb-2024 10:24	-	
04/	29-Feb-2024 10:24	-	
05/	29-Feb-2024 10:24	-	
06/	29-Feb-2024 10:24	-	
07/	29-Feb-2024 10:24	-	
08/	29-Feb-2024 10:24	-	
09/	29-Feb-2024 10:24	-	
10/	29-Feb-2024 10:24	-	
11/	29-Feb-2024 10:24	-	
12/	29-Feb-2024 10:24	-	
13/	29-Feb-2024 10:24	-	
14/	29-Feb-2024 10:24	-	
15/	29-Feb-2024 10:24	-	
16/	29-Feb-2024 10:24	-	
17/	29-Feb-2024 10:24	-	
18/	29-Feb-2024 10:24	-	
19/	29-Feb-2024 10:24	-	
20/	29-Feb-2024 10:24	-	
21/	29-Feb-2024 10:24	-	
22/	29-Feb-2024 10:24	-	
23/	29-Feb-2024 10:24	-	
24/	29-Feb-2024 10:24	-	
25/	29-Feb-2024 10:24	-	
26/	29-Feb-2024 10:24	-	
27/	29-Feb-2024 10:24	-	
28/	29-Feb-2024 10:24	-	
29/	29-Feb-2024 10:24	-	
30/	29-Feb-2024 10:24	-	

3

5. Use the BACK button of the toolbar of your browser to come back to the On-line archive home page



Index of /ftp/ST/Combined-trace-gases-reanalysis_S2-03-01/Reanalysis-NO2_S2-03-01/Reanalysis-NO2_S2-03-01_nc/2018/09/18/

4. Download the .nc file by selecting one of it

../			
processed-no2_roma_20180918000000_20180918230000...	29-Feb-2024 10:24	589128	

Hands-on session (OU-S2-01-01 web application for time series statistics) - required by PEU

iride SE-S2 Air Quality Home Menu Help Logout

Welcome to the IRIDE S2 Air Quality Service

The purpose is to support the operational users, in charge of the generation of the products and model outputs for the management of air quality in using EO based services, to improve air quality model results.

You are now on the web application that is a unique point of access for:

- (i) collecting and orchestrating air quality data from heterogeneous sources
- (ii) visualizing 2D air quality data maps
- (iii) disseminating forecast model output, co-located EO+ground data and re-analysis model output.

Available Case Studies:

Case Study	Description	Login Required
	S2-01 Data viewer AQ Monitoring and Forecast data (Satellite, AQ model output, re-analysis results)	No Login Required
	S2 Products On-line Archive 3D AQ model output, AQ co-located Satellite&Ground-based Remote Sensing data, AQ re-analysis products	Login Required
	S2 Jupyter Notebook Time Series statistics on Air Quality model output	Login Required

LOGIN

Login to access the Jupyter Notebook

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Hands-on session (OU-S2-01-01 web application for time series statistics)



ATMOSPHERE ATMOSPHERE CLIMATE EARTH OBSERVATION SATELLITE

Dataset: ARPAE_20_NO2
Minimum value: 0.5528776548676
Maximum value: 40.2827794775
Average value: 19.807168126789356



Time Series statistics on Air Quality model output

PUBLISHER: NOEMI FAZZINI

This Notebook allows statistics on single point time series and the plot visualization for a specific dataset in the Adam catalogue. It extracts minimum, maximum and average values from a time series

TAGS:

AIR QUALITY ATMOSPHERE IRIDE LOT.1 S2 - AIR QUALITY AIR QUALITY ARPAE NO2 PM10 PM25

[Open on GitHub](#)

Go to GitHub to download and use the code



Tutorial page of the Jupyter Notebook implemented for statistics on time series

Time Series statistics on Air Quality model output

How to compute statistics (minimum, maximum and average) on single point time series and the plot visualization for a specific dataset in the Adam catalogue, in this case applied to the Air Quality model output provided by ARPAE, by using searching and filtering functionalities provided through the API.

Introduction

This notebook shows how to implement an advanced search operation for a specific dataset, by using the functionalities provided in the Adam API, by defining



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eesa



Hands-on session (OU-S2-01-01 web application for time series statistics)

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Time Series statistics on Air Quality model output

How to compute statistics (minimum, maximum and average) on single point time series and the plot visualization for a specific dataset in the Adam catalogue, in this case applied to the Air Quality model output provided by ARPAE, by using searching and filtering functionalities provided through the API.

Introduction

This notebook shows how to implement an advanced search operation for a specific dataset, by using the functionalities provided in the Adam API, by defining a search operation using the filters enabled for a dataset selected in the catalogue. It extracts minimum, maximum and average values from a time series, by using searching and filtering functionalities provided through the Adam API. This notebook shows how to implement an advanced search operation for a specific dataset, by using the functionalities provided in the Adam API, by defining a

source code on GitHub

From IRIDE Catalogue <https://dev-portal.irideservices.earth> to S2 ET



Catalog Contact

Thematic Areas



Coastal and Marine Monitoring



Air Quality

Access the S2 Air quality IRIDE service



Ground Motion



Monitoring of land cover and use



Hydro-meteorology climate



Water Management



Emergency



Security

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PIANO NAZIONALE DI RIPRESA E RESILIENZA



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Catalog Contact



Air Quality Monitoring and Forecast
[SE-S2-01]

Open the Air quality
SVC S2-01-01

Monitoring and assessment
[SE-S2-02]

Re-analysis of air quality at national scale
[SE-S2-03]

Air quality

The main contribution of the IRIDE Service Segment in this application domain is a web service that provides 3D maps from prediction models, generated by institutional bodies. This platform allows access to all federated model data and satellite information necessary to support air quality monitoring and modeling activities. Moreover, the Service Segment of IRIDE provides geospatial products derived from satellite in support of pollutant monitoring.

The geospatial services of IRIDE dedicated to this application domain are:

- Support for monitoring and forecasting air quality
- Support for monitoring and evaluation of pollutant emissions
- Reanalysis of air quality on a national scale

Stefania Pasetti (pasetti@meco.it) ha eseguito l'accesso

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Air quality

Air Quality Monitoring and Forecast
[SE-S2-01]

Monitoring and assessment of pollutant emissions
[SE-S2-02]

Re-analysis of air quality at national scale
[SE-S2-03]

Air Quality Monitoring and Forecast.

GSP Products Catalogue

Description

Precursor Phase Service Delivery Plan

The Products are accessible clicking on the Access to Products button.

ATTENTION: "The geospatial contents included in the Living Lab may still be partially validated"

[OU-S2-01-01] [AOD EO products](#)

Access to Products

[OU-S2-01-02] [Pollutants EO products](#)

Access to Products

[OU-S2-01-03] [Web application](#)

Access to Products

This is the second output of the S2-01, select for information

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From IRIDE Catalogue <https://dev-portal.irideservices.earth> to S2 ET



Air quality

Air Quality Monitoring and Forecast
[SE-S2-01]

Monitoring and assessment of pollutant emissions
[SE-S2-02]

Re-analysis of air quality at national scale
[SE-S2-03]

Air Quality Monitoring and Forecast.

GSP Products Catalogue

Description

Precursor Phase Service Delivery Plan

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[OU-S2-01-02] [Pollutants EO products](#)

[OU-S2-01-03] [Web application](#)

Access to Products

Access to Products

Access to Products

Select the related tab
ACCESS TO PRODUCT
to access it

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From IRIDE Catalogue <https://dev-portal.irideservices.earth> to S2 ET

The screenshot shows the IRIDE Product Catalogue interface. At the top, there is a search bar with the text "Ricerca ...". Below the search bar, there is a list of search results. The first result is highlighted in yellow and has a yellow callout box pointing to it with the text "Select the name of the product to explore its feature". The callout box contains the text "Select the name of the product to explore its feature".

The interface includes a map on the left side, a filter section with "Filtri attivi" and "Parole chiave PROD_ID:S2-01-02", and a "Filtro" section with "Aree Tematiche", "SVCs", "Prodotti", and "Start temporal extent".

	Titolo	Stato	Azioni
<input type="checkbox"/>	S2-01-02: S5p-Satellite air quality data (EO ARD), Italy, 12/07/2018		

From IRIDE Catalogue <https://dev-portal.irideservices.earth> to visualize WMS layers

IRIDE catalogue metadata

S2-01-02: S5p-Satellite air quality data (EO ARD), Italy, 12/07/2018

Satellite Air pollution observations from Sentinel 5p Tropomi instrument. Six products are available on the exploitation tool, one per each pollutant: O3, NO2, SO2, HCHO, CO vertical column density and Cloud Top Height

Estensione temporale
12-07-2018T00:00:00 → 28-02-2024T00:59:59

Discover data

API

WMS <https://das.iride.adamplatform.eu/vmts?VERSION=1.1.1&REQUEST=GetCapabilities&SERVICE=WMS&> Aggiungi strato di servizio alla mappa

Sc caricare https://explorer.iride.adamplatform.eu/?use_case=1 Scaricare

Collegamenti https://explorer.iride.adamplatform.eu/?use_case=1 Apri link

Access and use constraints
Access restricted to Pilot Users for Lot 1, Industrial Team for Lot 1, ESA IPT and authorized people by ESA IPT
Public access to spatial data sets and services would adversely affect the confidentiality of commercial or industrial information which is of a confidential nature.

Copy the GetCapabilities link and open your webGIS system

Instruction on how to use the WMS link: example on QGIS

1. Name the connection as you prefer

2. Paste the API/WMS link (copied from the IRIDE catalogue) but a token is required to be added...

3. To retrieve your token, login to ET from IRIDE catalogue (or directly <https://explorer.iride.adamplatform.eu>)

OK Annulla Aiuto

Instruction on how to use the WMS link: example on QGIS

Crea una Nuova WMS/WMTS Connessione

Dettagli Connessione

Nome: iride-tokenOK

URL: `https://das.iride.adamplatform.eu/wmts?VERSION=1.1.1&token=1e665bd7fe56a2a4f2b98588b356dc`

Autenticazione

Configurazioni: Base

Scegli o crea una nuova configurazione di autenticazione

Nessuna Autenticazione

Le configurazioni memorizzano le credenziali criptate nel database di autenticazione di QGIS.

HTTP

Riferimento:

Opzioni WMS/WMTS

Modalità DPI: tutto

- Ignora la URI GetMap/GetTile/GetLegendGraphic riportata nelle capabilities
- Ignora la URI GetFeatureInfo riportata nelle capabilities
- Ignora orientamento assi (WMS 1.3/WMTS)
- Ignora estensioni riportate del layer
- Inverti l'orientazione degli assi
- Trasformazione con allisciamento

OK Annulla Aiuto

1. Add the string "&token=" to the URL and paste after the "=" the token retrieved from ET

2. Flag the first WMS option

3. Close the created connection

Api Key

Your API key is:

231547415JGVNVI99626KNVJFDNV727926

Your Access Token is:

6948747FHDVB77938373NNXBBCX262626

Please be sure to copy the most updated token from the ET platform as it has been refreshed every hour

Instruction on how to use the WMS link: example on QGIS

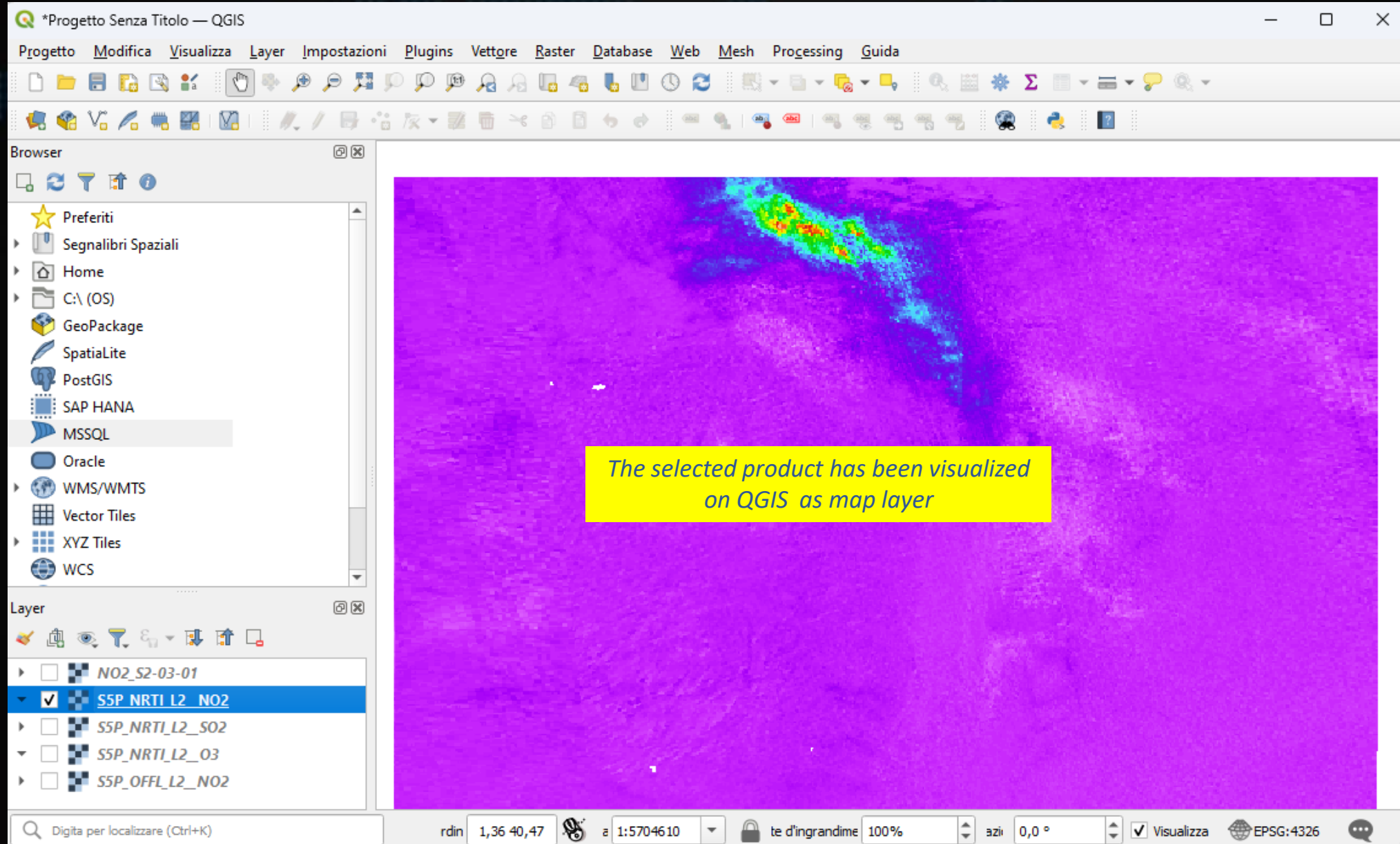
1. Activate the WMS connection from the Data Source Manager window

ID	Nome	Titolo	Riassunto
17	SSP_NRTI_L2_SO2	S5P_NRTI_L2_SO2	
19	SSP_NRTI_L2_CO	S5P_NRTI_L2_CO	
21	SSP_OFFL_L2_O3	S5P_OFFL_L2_O3	
23	SSP_NRTI_L2_O3	S5P_NRTI_L2_O3	
25	SSP_NRTI_L2_HCHO	S5P_NRTI_L2_HCHO	
27	SSP_NRTI_L2_NO2	S5P_NRTI_L2_NO2	
29	SSP_OFFL_L2_SO2	S5P_OFFL_L2_SO2	
31	S3_SY_2_AOD_	S3_SY_2_AOD_	
33	O3_S2-03-01	O3_S2-03-01	
35	NO2_S2-03-01	NO2_S2-03-01	
37	AQI_S2-03-01	AQI_S2-03-01	
39	PM10_S2-03-02	PM10_S2-03-02	

2. Select a product from the WMS list

3. Add the layer to visualize it

Instruction on how to use the WMS link: example on QGIS



From IRIDE Catalogue <https://dev-portal.irideservices.earth> to S2 ET

S2-01-02: S5p-Satellite air quality data (EO ARD), Italy, 12/07/2018

Satellite Air pollution observations from Sentinel 5p Tropomi instrument. Six products are available on the exploitation tool, one per each pollutant: O3, NO2, SO2, HCHO, CO vertical column density and Cloud Top Height

Estensione temporale
12-07-2018T00:00:00 → 28-02-2024T00:59:59

Discover data

API

<https://das.iride.adamplatform.eu/vmts?VERSION=1.1.1&REQUEST=GetCapabilities&SERVICE=WMS&>

Sc caricare

https://explorer.iride.adamplatform.eu/?use_case=1

Collegamenti

https://explorer.iride.adamplatform.eu/?use_case=1

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Public access to spatial data sets and services would adversely affect the confidentiality of commercial or industrial information which is of confidential or otherwise privileged nature.

You can go back to the IRIDE catalogue to explore the metadata or you can go back to the S2 ET from the catalogue or directly <https://explorer.iride.adamplatform.eu>



For any questions or comments on S2
do not hesitate to contact MEE0

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