

# ICOS (0.1.0)

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ICOS Carbon Portal: [info@icos-cp.eu](mailto:info@icos-cp.eu) | URL: <https://www.icos-cp.eu> | License: [GNU AGPLv3](#)

Access to data and metadata from the european Integrated Carbon Observation System, ICOS. The Carbon Portal is a one stop shop for european high quality greenhouse gas measurements.

This API is for users who like to have an easy access to the most common data objects and information about the research stations. Please note, that not all of the data objects and information is available through the API. For example we server only Level 2 data objects. If in doubt, please visit <https://www.icos-cp.eu/about-icos-data> to learn more.

## ICOS

Integrated Carbon Obeservation System

## find

### A list of data collections

No parameters returns a list of collection id's with a short description for each collection (what kind of data is included, size, data object id's.)

#### QUERY PARAMETERS

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|    |  |
|----|--|
| id | any<br>Collection id returns a list of data object descriptors, included in a specific collection. |
|----|--|

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→ limit

integer

limit the amount of entries returned. Very useful to test your query before you possibly get a list of thousands fo entries.

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## Responses

– 200 data collection

GET /collections



## A list of ICOS stations

without any parameters returns a list of all labeled and certified ICOS stations.

### QUERY PARAMETERS

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|         |  |
|---------|--|
| country | <p>string</p> <p>Returns a list of stations for a specific country.</p> <p><a href="https://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#WO">https://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#WO</a></p>   |
| id      | <p>string</p> <p>Return the metadata about an ICOS station. The same information as seen online at the "landing page". The landing page URL is returned with the parameter "url"</p>   |
| theme   | <p>any</p> <p>Enum: "ATC" "ETC" "OTC"</p> <p>ICOS has three main distinction of themes, where green hous gas measurments are collected: OTC (Ocean), ETC (Ecosystem), ATC (Atmosphere).</p>  |
| bb      | <p>Array of number</p> <p>BoundingBox. If you provide latitude and longitude of the top left corner and bottom right corner of a box, you will get a list of icos stations within that box. Example: <code>api/stations?bb=[50,-10, 30, 15]</code></p> |

## Responses

– 200 ICOS certified stations

GET /stations



## Povisional ICOS stations

get a list of icos stations in the labeling process

### QUERY PARAMETERS

|         |   |
|---------|---|
| country | string<br>Returns a list of stations for a specific country.<br><a href="https://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#WO">https://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#WO</a> |
| theme   | any<br>Enum: "ATC" "ETC" "OTC"<br>ICOS has three main distinction of themes, where green hous gas measurments are collected: OTC (Ocean), ETC (Ecosystem), ATC (Atmosphere).          |

## Responses

– 200 provisional icos stations

GET /stations/provisional



# A list of data objects

Download a list of data objects or if you provide a valid data object ID, you get the information about that specific digital object. If you don't set the parameter "limit", by default we set a limit of 25. If you want "all" you need to set limit to -1. But be very careful, we have thousands of data objects.

## QUERY PARAMETERS

|           |   |
|-----------|---|
| bb        | <p>Array of number</p> <p>BoundingBox. If you provide latitude and longitude of the top left corner and bottom right corner of a box, you will get a list of icos stations within that box. Example: <code>api/stations?bb=[50,-10, 30, 15]</code></p>  |
| country   | <p>string</p> <p>Returns a list of stations for a specific country.</p> <p><a href="https://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#WO">https://en.wikipedia.org/wiki/ISO_3166-1_alpha-2#WO</a></p>  |
| id        | <p>string</p> <p>Provide a valid digital object id. In return you will get the meta data information about the dataset. If you want to download the data itself including the meta data, you need to call <code>/api/download?id=1234</code></p>  |
| theme     | <p>any</p> <p>Enum: <code>"ATC"</code> <code>"ETC"</code> <code>"OTC"</code></p> <p>This is a filter for data belonging to:</p> <ul style="list-style-type: none"> <li>• ATC (atmosphere)</li> <li>• ETC (ecosystem)</li> <li>• OTC (ocean)</li> </ul>  |
| startDate | <p>integer</p> <p>The measurement/observation data first time stamp is...yyyymmdd</p>   |
| endDate   | <p>integer</p> <p>The measurement/observation data last time stamp is...yyyymmdd</p>  |
| variable  | <p>any</p> <p>Enum: <code>"OTC_Sea_surface_fCO2"</code> <code>"OTC_Water_vapour_pressure"</code> <code>"OTC_Atmospheric_xCO2"</code> <code>"ETC_CO2_fluxes"</code> <code>"ETC_CH4_fluxes"</code> <code>"ETC_N2O_fluxes"</code> <code>"ETC_Soil_Heat_fluxes"</code> <code>"ETC_Soil_CO2_automatic_chambers"</code> <code>"ATC_CO2"</code> <code>"ATC_CH4"</code> <code>"ATC_CO"</code> <code>"ATC_Air_temperature"</code> <code>"ATC_Relative_humidity"</code> <code>"ATC_Wind_direction"</code></p> <p>This is a full list of variables collected from the ICOS stations. Depending on the THEME and CLASS of the station, not all the variables are available.</p> |
| limit     | <p>integer</p> <p>You can limit the returned list to N entries.</p>   |

stationId  
format

string

You can search for data measured at a specific station.

any

Value: `"list"`

By default you will get a list with meta data about the data objects. If you choose the output to be format=list you will get an array back, which can be used in the downlad part. You may feed this output directly into `/api/download?id=list`

## Responses

— 200 data object information

GET /find



## download

### Download data

Download specific data objects.

#### QUERY PARAMETERS

id  
required

any

Please provide an array of digital object identifiers (PID) as single argument for one file, or an array for multiple files Example single file: `/api/download?id=123456` Example multi file: `/api/download?id=[123456, 4362346, 32452345+, 1325415432lk3]`

## Responses

— 200 download completed

GET /download



## Download citation

Download citation for a single specific data object. By default a "BibTex" file, alternative formats are available with the parameter ?format=

### QUERY PARAMETERS

└ id

required

└ format

any

provide a single data object id

any

Enum: 

BibTex

Txt

Json

XML

RisFormat

Please define the desired format for the citation. If the parameter is not set, by default a "Bibtex" format is provided.

## Responses

— 200 ICOS\_citation\_downlaod


GET /download/citation



## Download metadata

Download metadata for a specific single data object. By default the format is a "json" object, but alternative formats are provided by setting the parameter ?format=

#### QUERY PARAMETERS

|   |                |  |
|---|----------------|--|
|  | id<br>required | string<br>Id for a single specific data object.  |
|   | format         | any<br>Enum: "json" "xml" "txt" "turtle"<br>By default a json string is provided. Alternative you can choose a different format. |

## Responses

– 200 ICOS\_metadata\_download

GET /download/metadata

