

## ICOS Carbon Portal Newsletter

July 2017

### 4<sup>th</sup> ICOS Summer School in Hyytiälä



The 4<sup>th</sup> ICOS Summer School was held from 24 May until 2 June 2017. As in the previous editions the motto was: "Challenges in greenhouse gas observations and modelling". 37 students attended the Summer School and enjoyed the lectures, the practical work and the free time at Hyytiälä field station.

From the students, 8 were from ICOS candidate countries and 3 were from non-ICOS countries.

The school handled almost all relevant aspects of Carbon Cycle science in the context of global climate change, organized as lectures and practical exercises. One session of two half days was oriented on practical measurements using relatively simple sensors for measurement of temperature, humidity and CO<sub>2</sub> concentrations. Next to practical work on time series analysis using R, the students got in another practical of two afternoons hands on experience with (global) transport models and inverse model systems (touching on for example Bayesian inversions and Kalman filters).

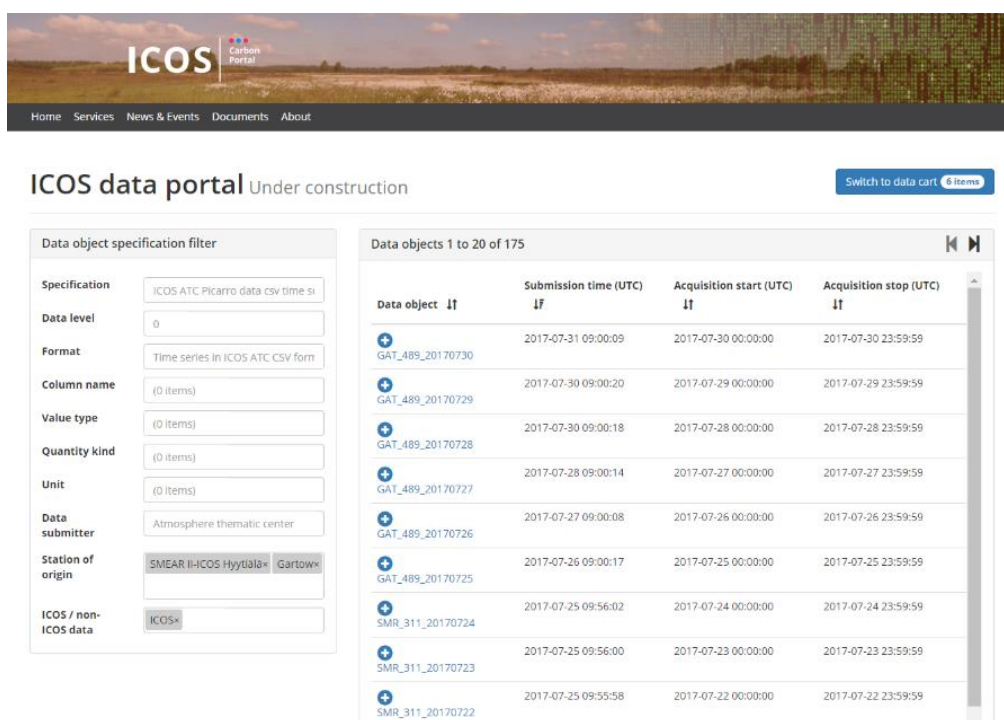
The evaluation showed that this edition was the best ICOS summer school thus far with an overall score of 4.9 on a scale of 6 with highest scores for the quality of the lectures. We should thank the lecturers for this result. Kudos for: Martin Heimann, Anders Lindroth, Greet Maenhout, Christoph Gerbig, Maarten Krol, Kadmiel Maseyk, Wouter Peters, Alex Vermeulen and Timo Vesala for their excellent work! Also many thanks for the support by Olli Peltola, Elisa Halmeenmäki, Aki Tsurata and the Hyytiälä field station staff!

Read more in the student blog on the summer school by Renato Braghieri:  
<https://thesocialnetwork.wordpress.com/2017/07/07/4th-icos-summer-school/>

### ICOS Data Portal is getting shape and data is flowing!

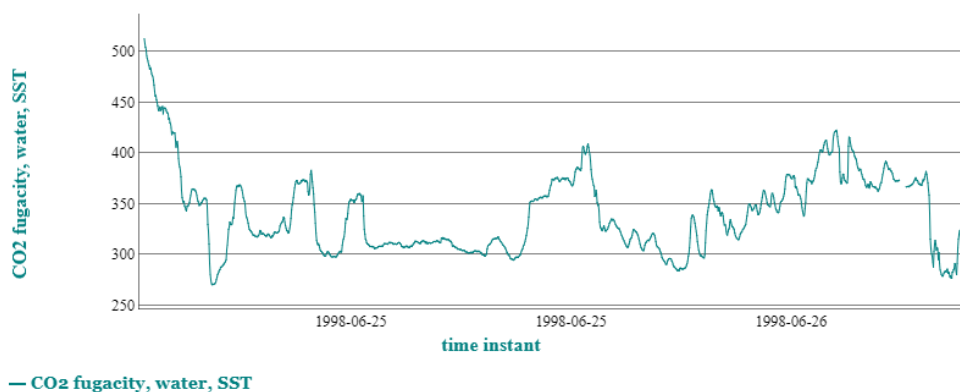
By step-wise improvements the ICOS Carbon portal is getting shape! Behind the screens the data portal is already taking in ICOS data in all possible shapes from ATC, OTC and ETC, although this is not directly visible to normal users yet. However at this page you can get a sneak preview: <https://data.icos-cp.eu/portal/>. Below you can see as an example a screenshot where the most recent raw data files from Gartow station are shown. Data objects can be

selected from this screen and are then added to a so called “data cart”. From there you can further inspect the data by, if possible, showing a graph, looking at the metadata through the landing page or, if allowed, download the data.



The screenshot shows the ICOS data portal interface. On the left is a 'Data object specification filter' with fields for Specification, Data level, Format, Column name, Value type, Quantity kind, Unit, Data submitter, Station of origin, and ICOS / non-ICOS data. On the right is a table titled 'Data objects 1 to 20 of 175' with columns for Data object, Submission time (UTC), Acquisition start (UTC), and Acquisition stop (UTC). The table lists several data objects with their respective timestamps.

Here an example of a graph of OTC data from a ship track.



Using the ICOS object identifiers and the API you can link this kind of interactive graph into your own website. For this example the URL is:

[https://data.icos-cp.eu/dygraph-light/?objId=ehVNj5ZfPGpy4mJ\\_GQlTe\\_Mm&x=TIMESTAMP&y=fCO2water\\_SST\\_wet%20\[%C2%B5atm\]&type=line](https://data.icos-cp.eu/dygraph-light/?objId=ehVNj5ZfPGpy4mJ_GQlTe_Mm&x=TIMESTAMP&y=fCO2water_SST_wet%20[%C2%B5atm]&type=line)

## Register at My CP (and apply for an ORCID)

In order to make best use of the ICOS Carbon Portal we advise you to register at My CP if you have not done so already: <https://cpauth.icos-cp.eu/login/>. You can use your institute login through SAML, Facebook (soon Google), ORCID or a simple email-address based login. When

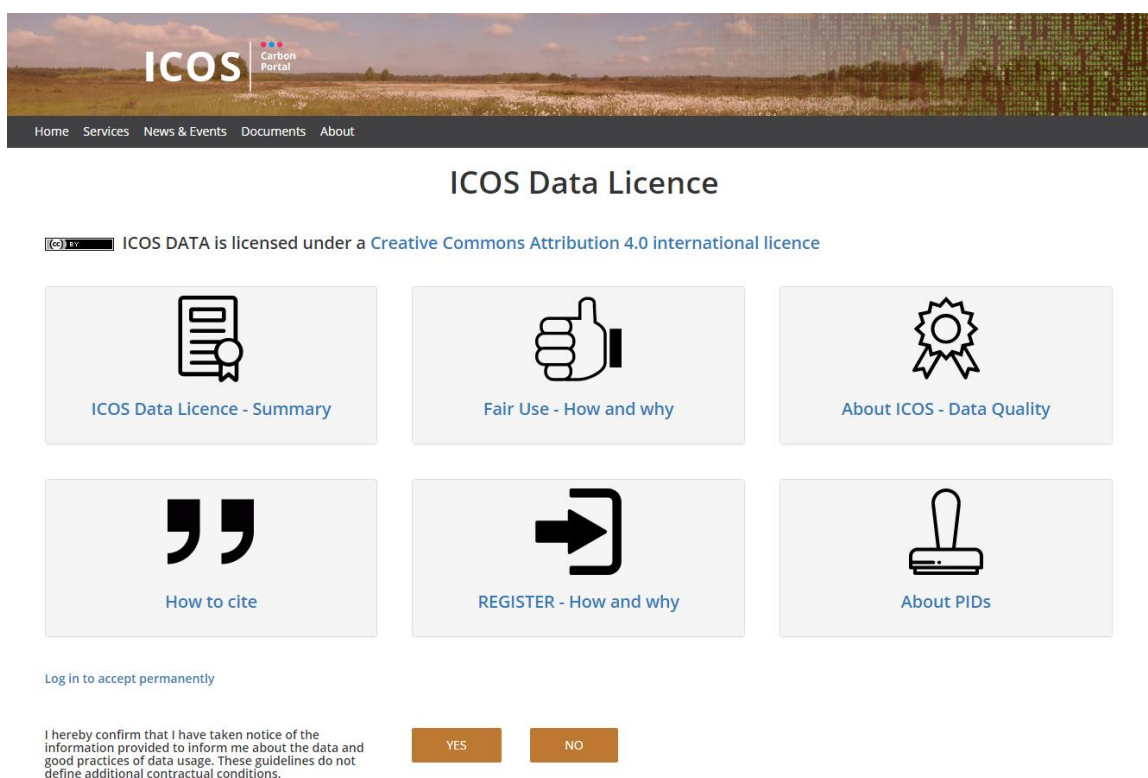
you connect to this your ORCID account we will in the future support you even better by for example automatically pushing your contributions to ICOS data to your ORCID profile. All information in My CP iexcept the email address is voluntary and remains your property. All data there can be removed by you with a single click. The idea is that here you will in the future also find your most recent downloads and searches (if you allow us to store this info) and a link to a list of your data contributions and the data usage of your contributions.

In MyCP you can also set a switch that you accept the ICOS data license. So next time when you access ICOS data after logging in to CP you do not need to accept the ICOS data license any more for each individual file! See also our next item.

## ICOS download, license checking and usage tracking enabled

Already since several months the technical means to enable the checking of the ICOS data license and tracking of data usage has been fully implemented at the Carbon Portal.

Whenever a user accesses an ICOS data object, the ICOS data license acceptance procedure is triggered. In a web browser the user will see the following screen:



After acceptance, the data object will be streamed from wherever the data object is stored (Carbon Portal disk, EUDAT service) to the user. When the user is logged into CP and has marked the acceptance flag in MyCP (see previous newsletter item) or when one uses the API token generated for your user account, the license checking is bypassed. All data transfers are logged into the CP database by data object, date and time and IP number.

Questions or feedback: <https://www.icos-cp.eu/node/46>