How to acess EFAS data through MARS

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MARS

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MARS is ECMWF's **M**eteorological **A**rchival and **R**etrieval **S**ystem. The system have the following features:

- Facilities to Archive and Retrieve environmental data
- MARS is a 24/7 service
- Batch and interactive modes are supported
- Large amount of data, both in size and number of items stored
- Large number of users with different requirements.

MARS actions

- **retrieve** to extract data from MARS or from a source file
- **compute** will perform mathematical operations on retrieved grid point fields in GRIB format
- **list** queries MARS about the data availability for a given request, without actually retrieving the data. It is suitable for interactive or batch use to check availability of certain datasets and its collocation in the archive
- **read** can be used to filter or manipulate data already retrieved into a file
- **write** is mainly used to save data from fieldsets, a temporary storage, into files,

MARS tree

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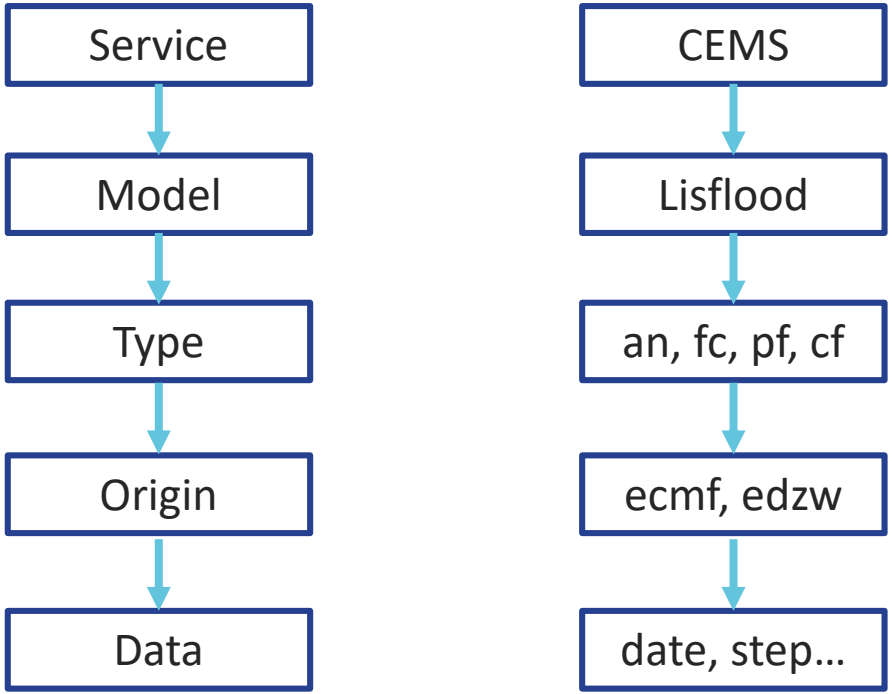

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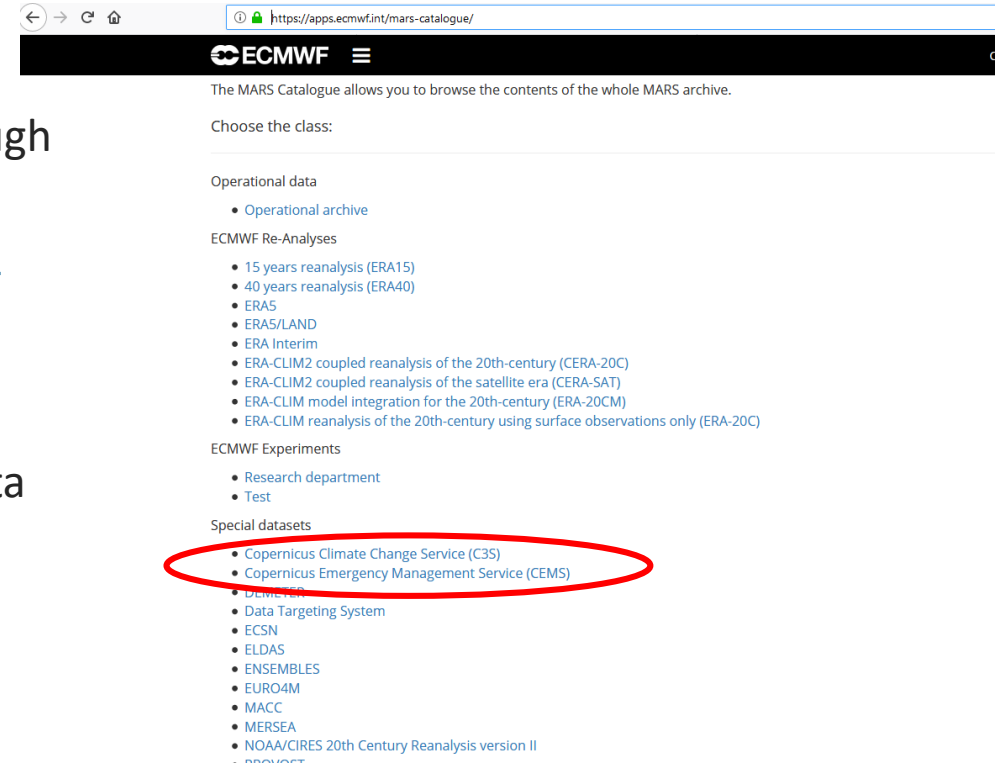
You can access the data through the adress https://apps.ecmwf.int/mars-catalogue/

You will then see all available datasets. Select the CEMS data by clicking on the link



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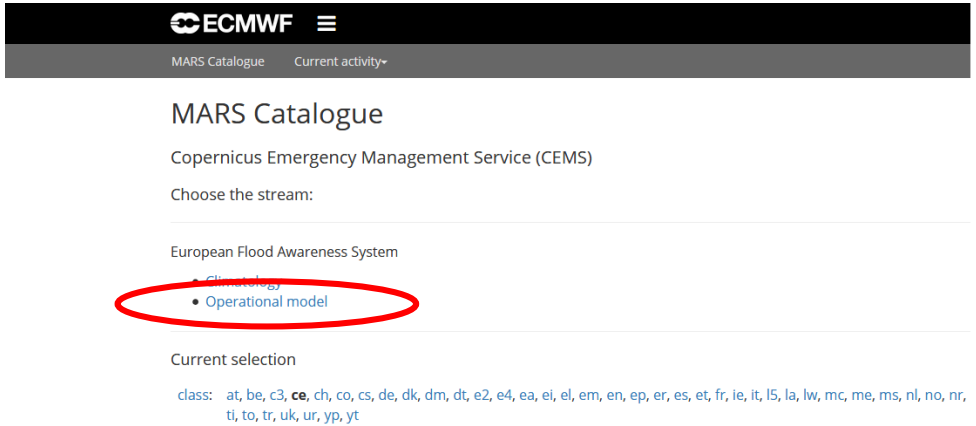
Here you see the two main streams of EFAS data, the **climatology** and the **operational model**. The climatology is the full set of runs from 1990-2018, the operational model are the real-time forecasts.

Click on operational model



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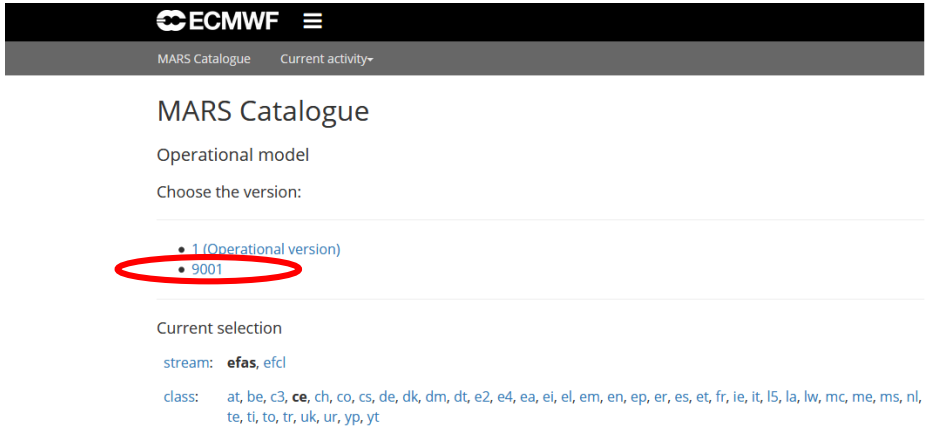
When you make selections you can see them as **bold** under the “Current selection”. You can always alter your selection by clicking on an alternative choice.

We now see the version 1, which is the operational model version, and 9001 which is the test version.

Click on ”9001”



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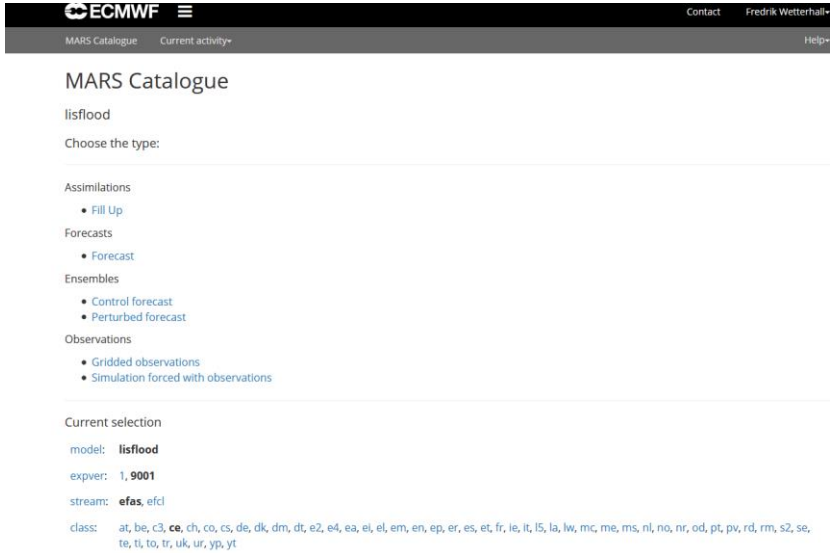
At this stage we can see the different types of data available, and the main types are either Forecasts (deterministic), Ensembles (control and perturbed) and Observations. You will see the type “Simulation forced with observation”. These are what aer also known as the “water balance run”. Fillup is used to bridge the gap between observations and forecasts in real-time.



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In this example I selected fc and can then see the available years in the archive. I click on the latest, 2019

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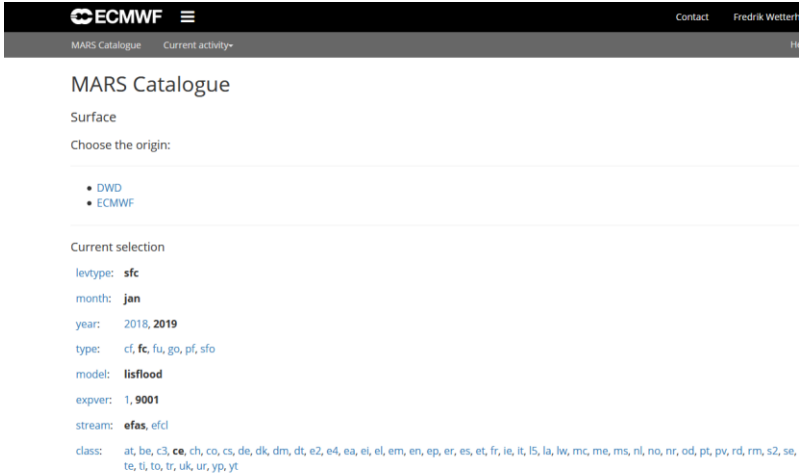
In the next step I can see the two types of models that were uses as forcing datya, ECMWF and DWD. For this exercise I select ECMWF



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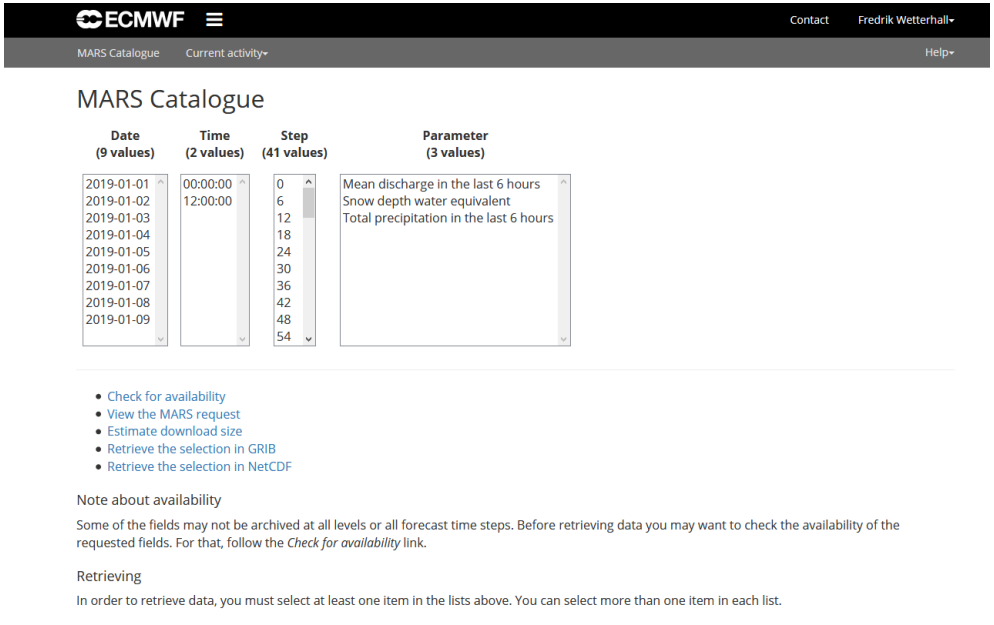
Finally, I get to the point where I can see the available parameters and can make the final choices. I can here also choose to either check if the data is available, download the data directly, or to see the MARS request as code.



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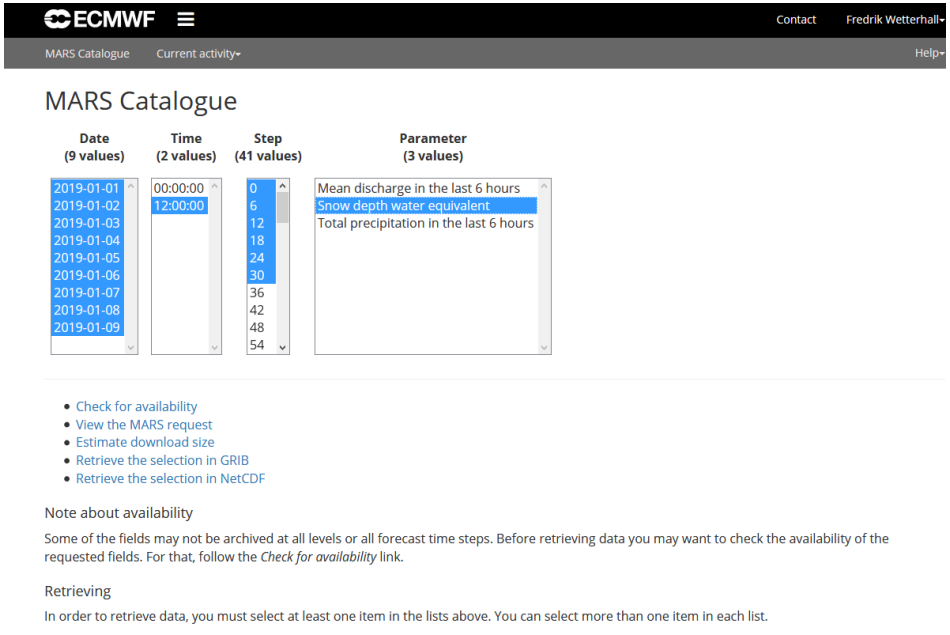
Here, I selected a number of forecast dates, the 12 forecast and the first 5 steps for the parameter snow depth water equivalent.



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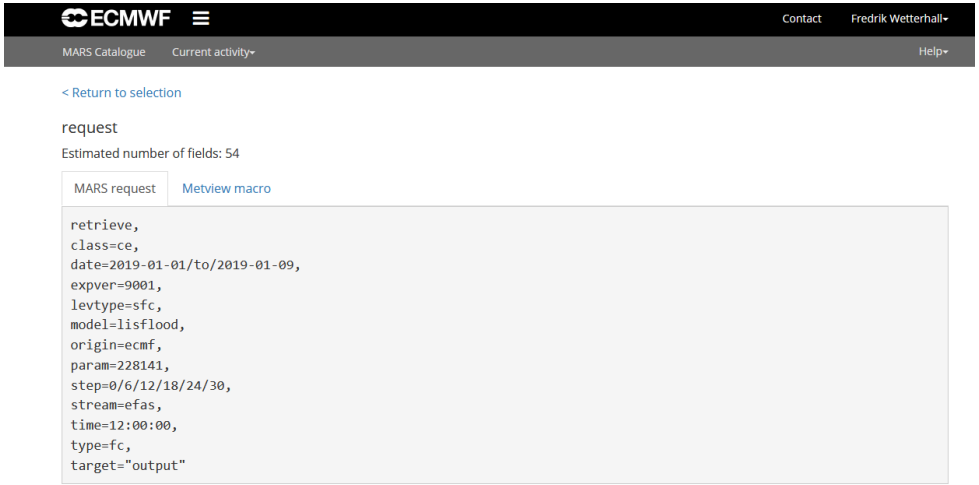
The retrieval looks like this in MARS language. This code can be altered, for example through a script to automatize retrievals and to customize the requests.



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Conclusions

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MARS is a very reliable and efficient tool to download data, but it requires some effort in terms of understanding how the mechanics work.

However, once a MARS retrieval is setup it is very easy to monitor and check that the transfers are being made.

MARS retrievals are most suitable for operational work and research.