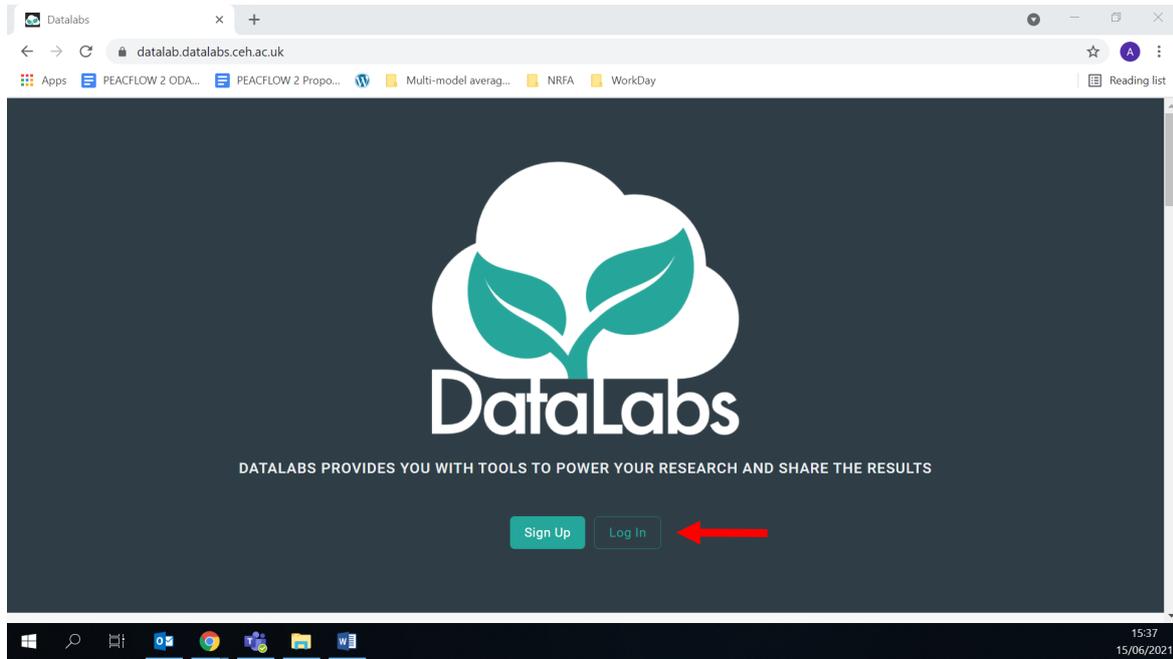
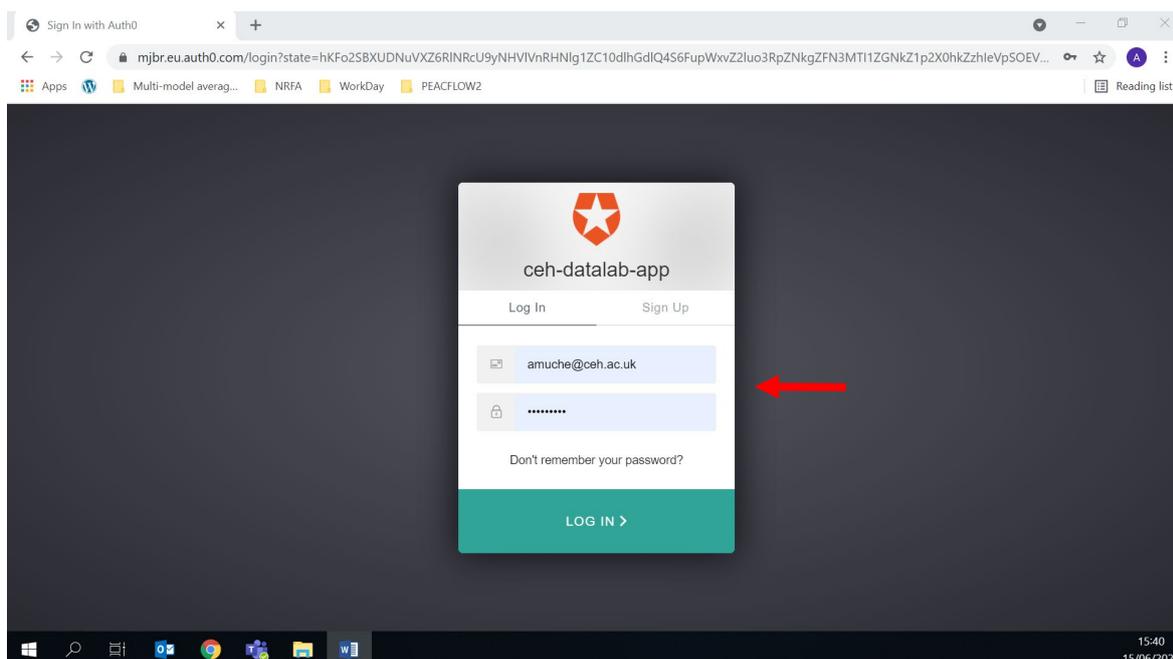


## Hydro-JULES Summer School DataLabs sessions 13<sup>th</sup> -15<sup>th</sup> July 2021

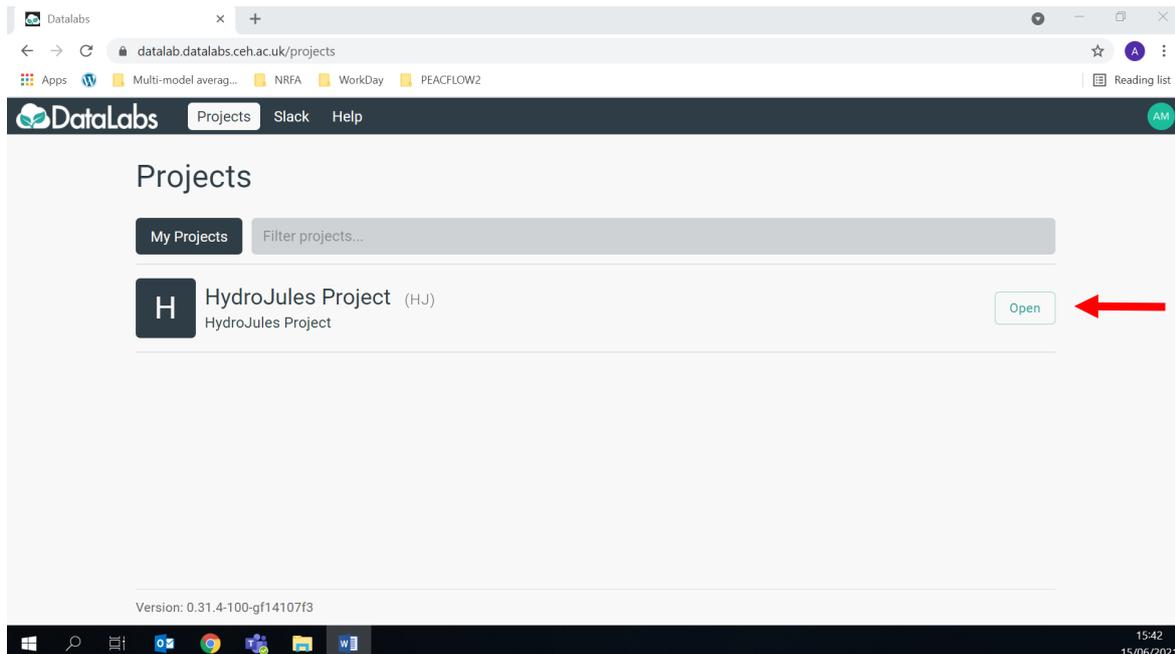
1. Please go to the webpage <https://datalab.datalabs.ceh.ac.uk/>, and click on the “Log In” button shown with the red arrow.



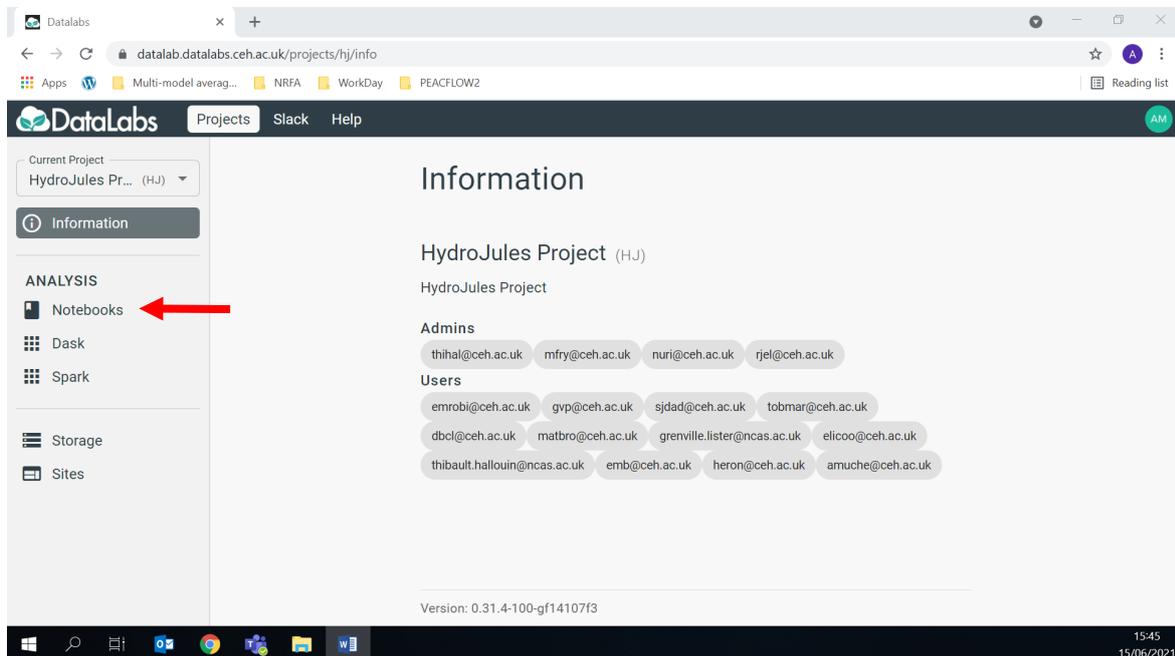
2. Please log in to the ceh-datalab-app (shown with the red arrow) with your created username and password.



3. Click on “Open” tab for the HydroJules Project shown with the red arrow.

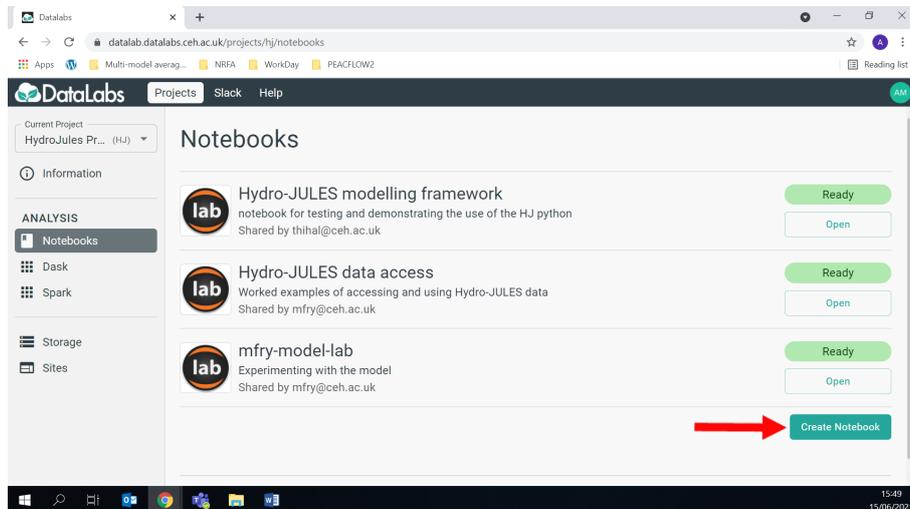


4. Please click on “Notebooks” tab (shown with the red arrow), in the left hand side panel under “Analysis” section.

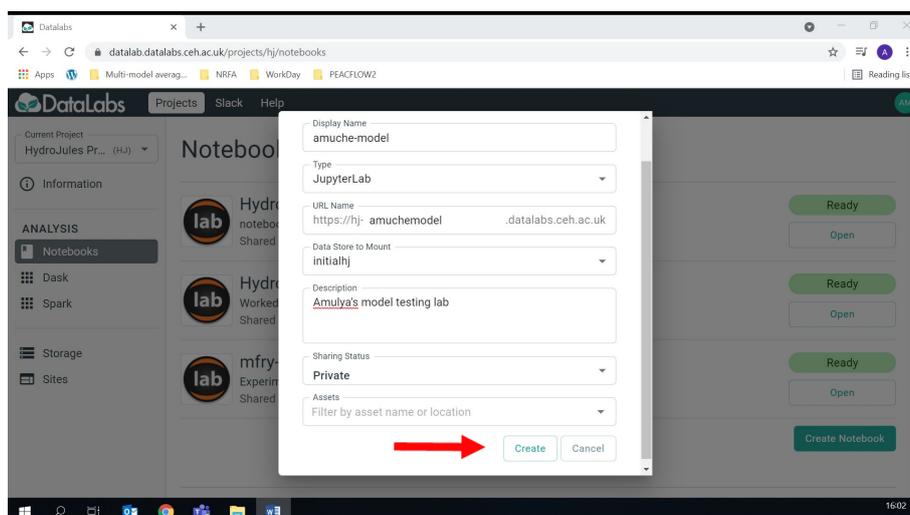


5. Please click on the “Create Notebooks” tab, on the right side of the webpage, shown with the red arrow. This will actually create a JupyterLab

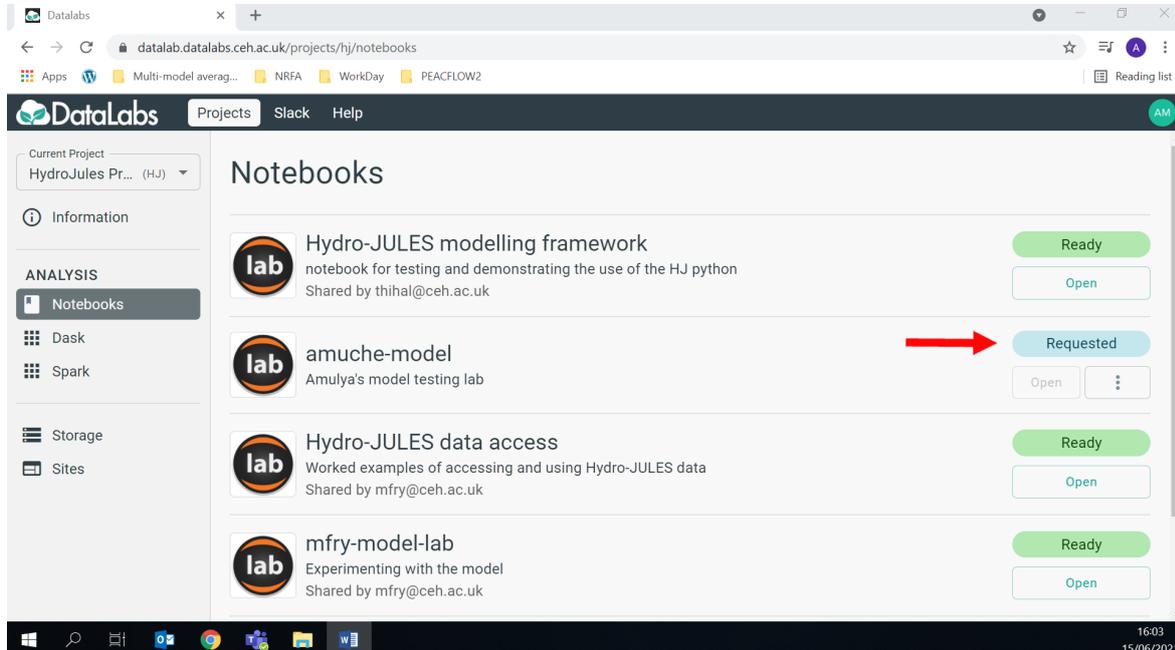
for you, which can host multiple notebooks. Fill in the options as per step 6 below



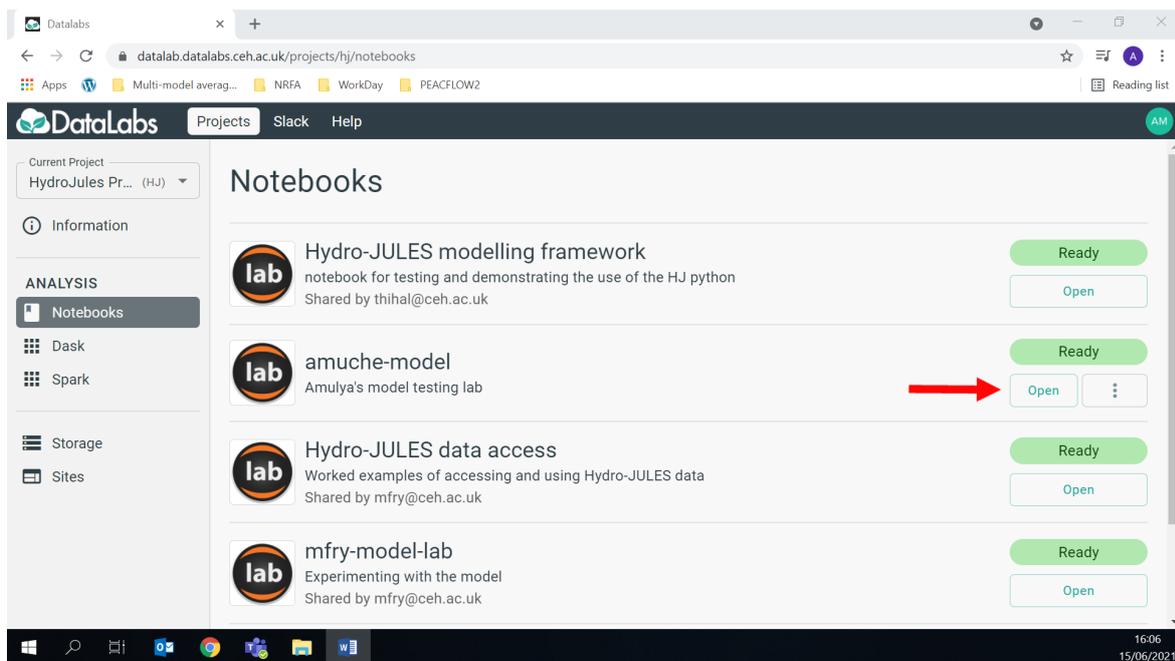
6. Fill in the following information in the pop up, scroll down if required.
    - a. Display Name – *anything* that you like
    - b. Type – select “*JupyterLab*” option
    - c. URL Name – *any word* (ideally similar to the Display Name without any space, dashes or underscore)
    - d. Data Store to Mount – select “*initialhj*” option
    - e. Description – *a few words* describing the JupyterLab
    - f. Sharing Status – select “*Private*” option
    - g. Assets – please leave *empty* or do not select any option
- Then click on the “*Create*” tab at the bottom, shown with the red arrow.



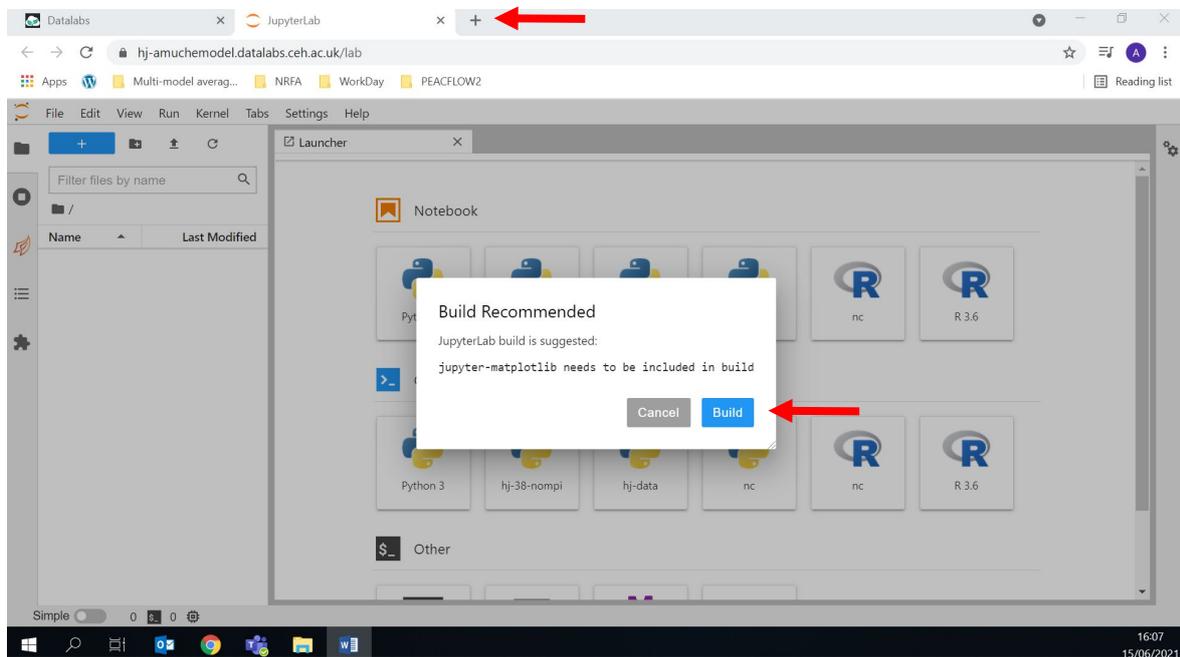
7. You should then see a new lab in your “Notebooks” page, with a blue “Requested” tab, shown with the red arrow. Please wait, this should turn into a green “Ready” tab in a few minutes (you may need to refresh your browser window).



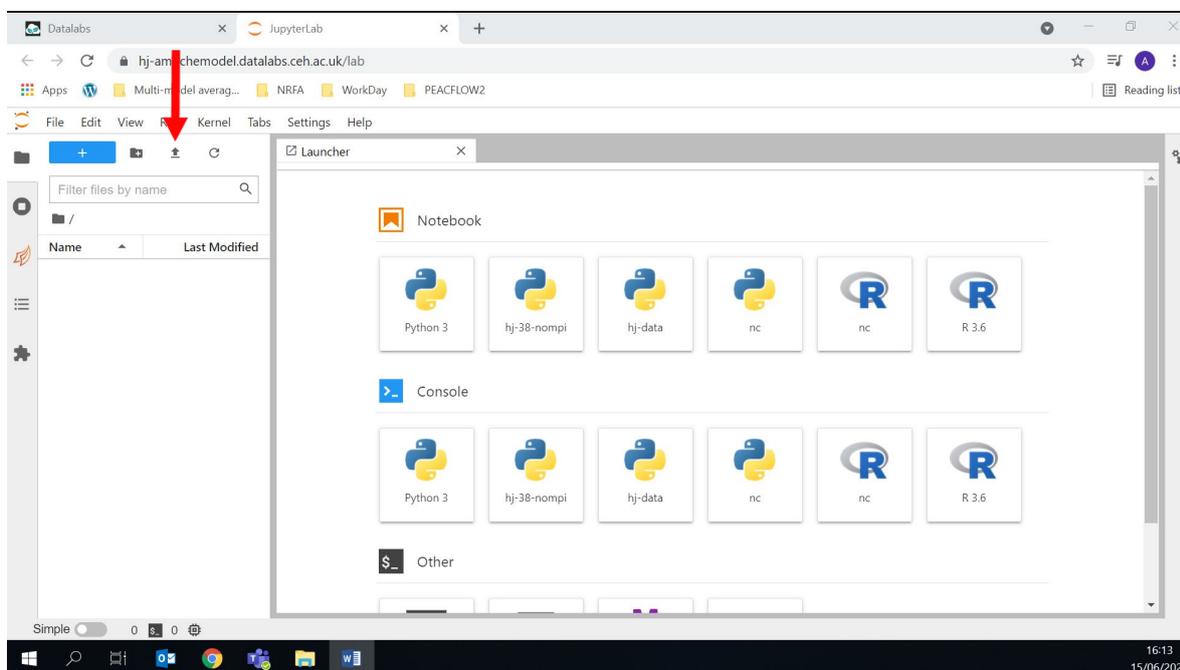
8. Please click on the “Open” tab (shown with the red arrow), associated with your newly created lab.



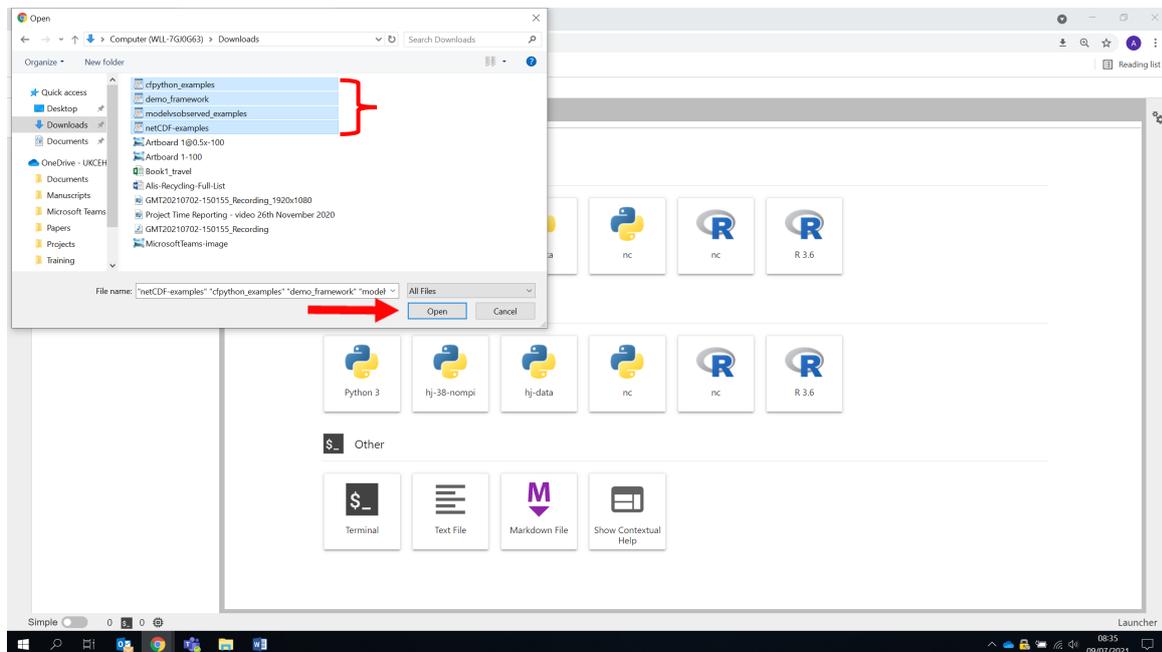
9. This opens a new browser tab with your JupyterLab (shown with a red arrow). You will see a “Build Recommended” pop up. Please click on the “Build” button shown with another red arrow.



10. Please click on the upload icon shown with the red arrow.



11. Using the upload pop up, please go to the folder where the three Jupyter notebooks (demo\_framework.ipynb, netCDF-examples.ipynb, cpython\_examples.ipynb, modelvsobserved\_examples.ipynb) that were sent to you are stored on your computer. Please select all the four files (shown with the red bracket) and click on the “Open” tab shown with the red arrow.



12. Now you can see all the three files in your lab’s left hand panel. You can double click on any notebook to launch it.

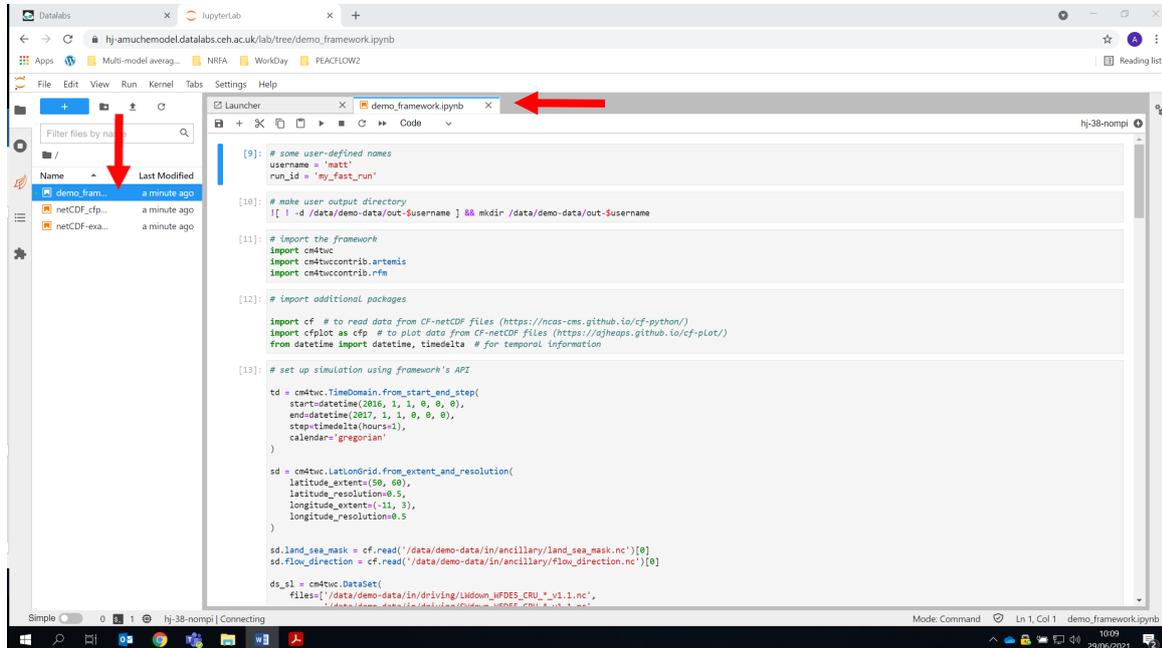
The suggested order for use of these notebooks is:

- netCDF-examples.ipynb - this notebook walks through the structure of a netCDF format data file, and shows how to access data, and plot it, using the netCDF4 library
- cpython\_examples.ipynb - this notebook demonstrates how to use the CF-Python library, which has a number of useful additional features for use with “CF compliant” netCDF files.
- demo\_framework.ipynb - this notebook walks through running a simple set of hydrological models using the Hydro-JULES modelling framework
- modelvsobserved\_examples.ipynb – this notebook demonstrates how to compare observed station data (in csv format) against modelled gridded dataset (in netCDF format).

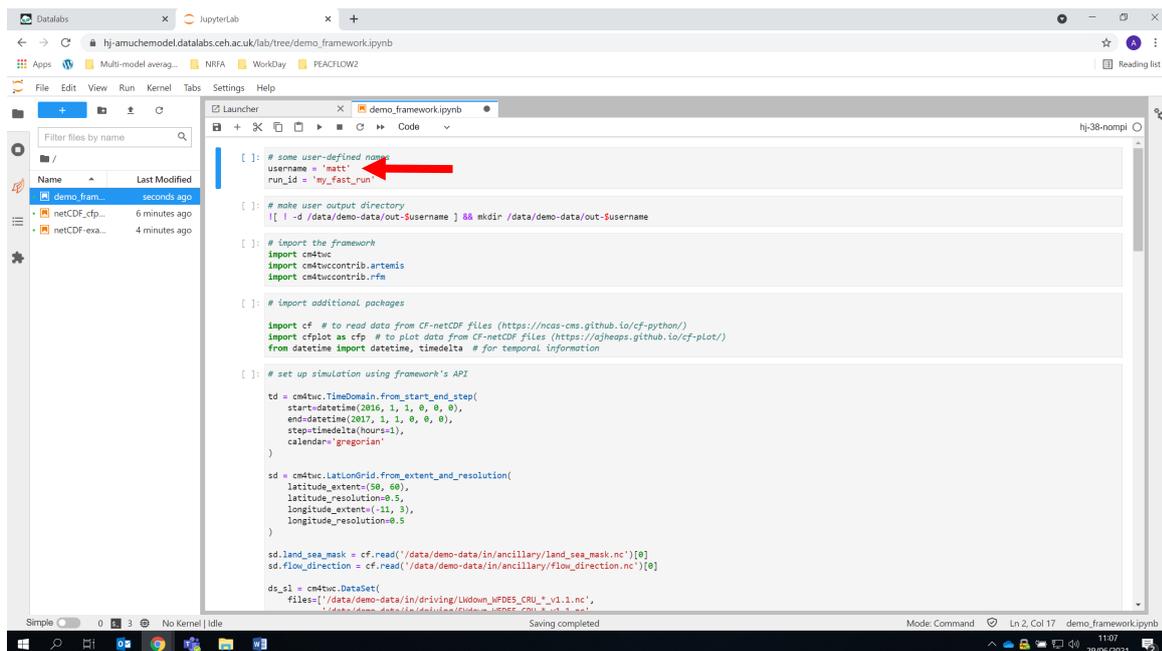
***Please see step 16 for further useful hints about running Jupyter Notebooks.***

13. When using the demo\_framework.ipynb notebook there are a number of specific steps to undertake:

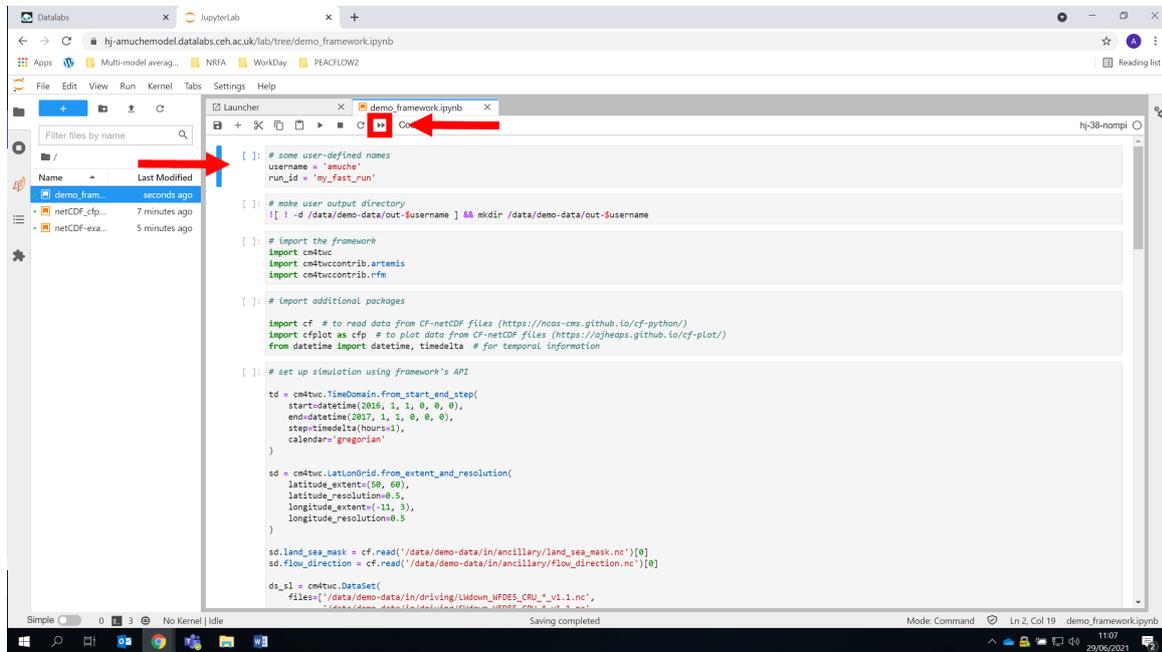
- Please double click on the “demo\_framework.ipynb” notebook to launch it, shown with red arrows.



14. In the launched demo\_framework Notebook, please go to second line of the Notebook and change the username from ‘matt’ to your “userid”. For example, with a username like “[testing@ceh.ac.uk](mailto:testing@ceh.ac.uk)” the userid becomes “testing” (i.e. avoid the use of the @ symbol). Please input your own userid not “testing”.



15. After changing the username (shown with a red arrow), please save the Notebook by clicking on the save icon shown with another red arrow. To run the code please use **▶▶** (red box) which restarts the kernel and runs the whole code. Please see step 16 for details about running Jupyter Notebooks.



16. More details about running a Jupyter Notebook.

