ARTS Lecture

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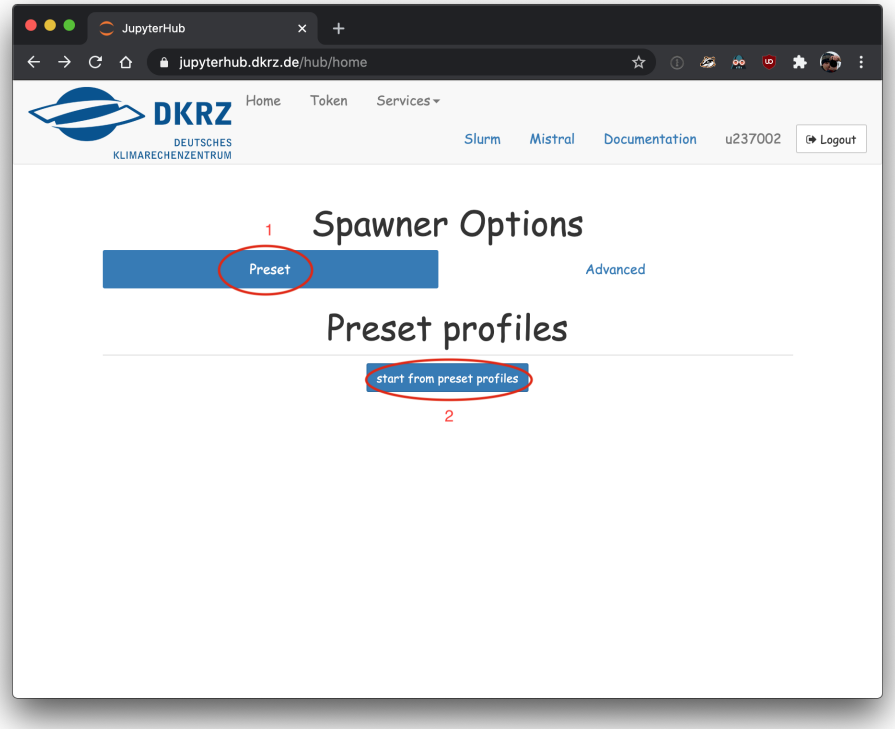
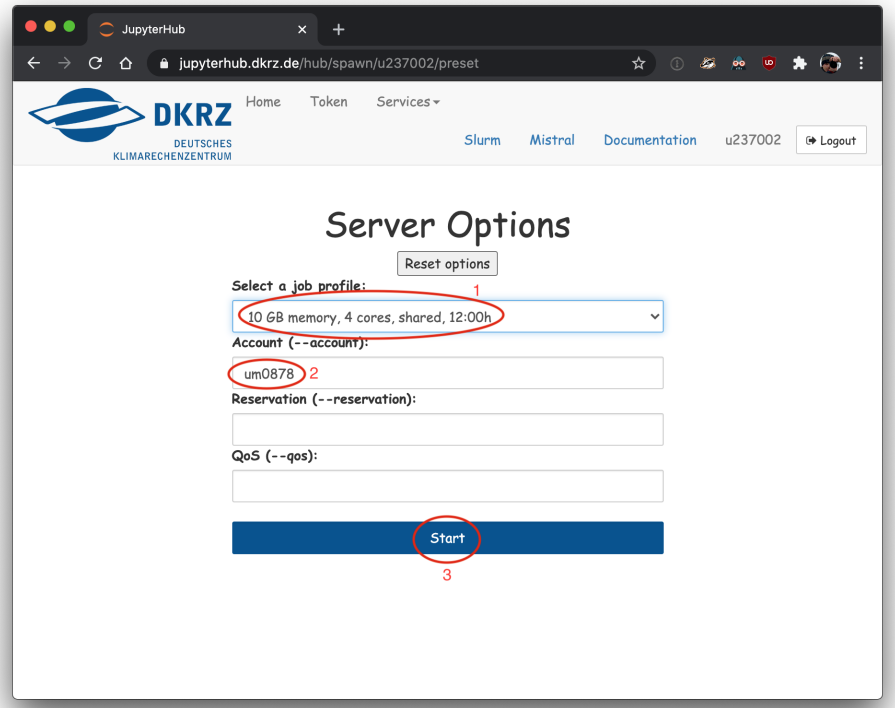
DKRZ JupyterHub

The exercises are provided as Python Jupyter notebooks and are run on JupyterHub provided by DKRZ.

Log in with your u-Account at https://jupyterhub.dkrz.de/

Choose the following profile, fill in the account name "um0878" and start a notebook server

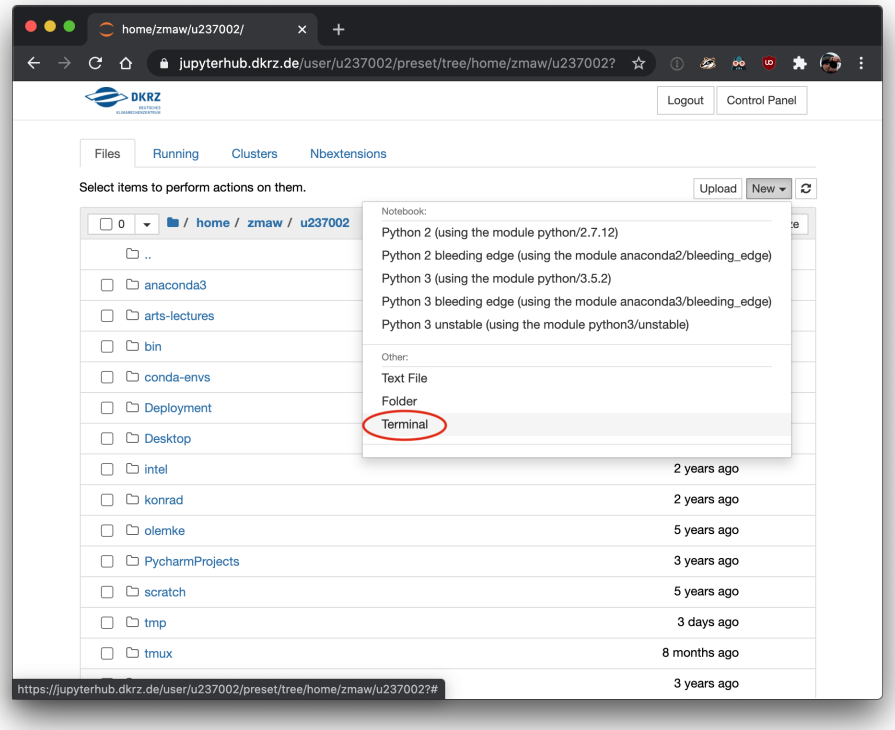




First time setup

First, you have to checkout the lecture git repository and install the required Python modules, the following step has to be done only once.

Open a terminal



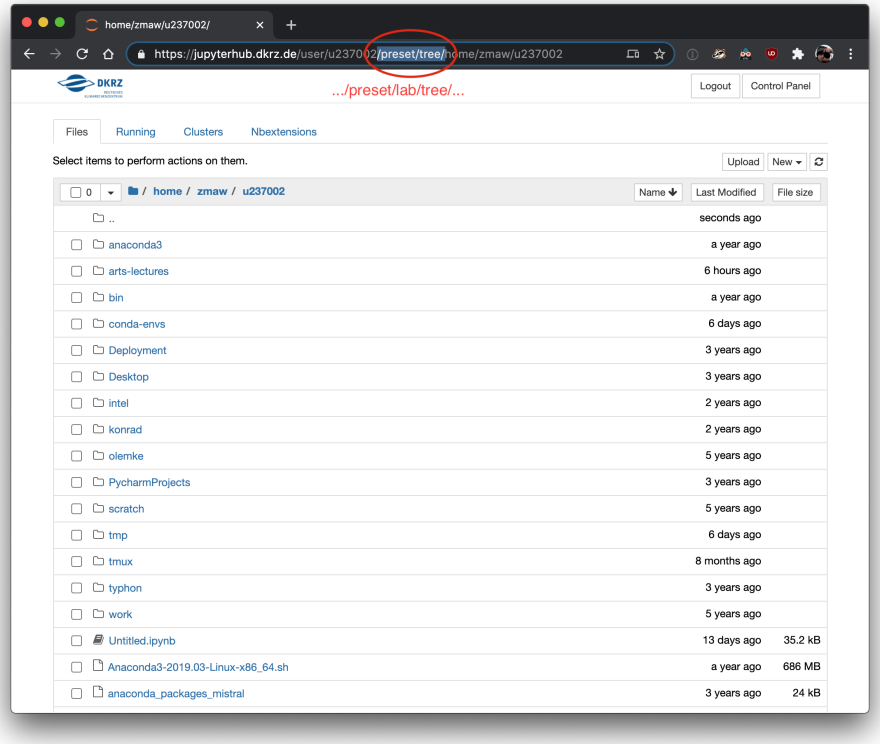
Run the following commands by copy'n'pasting them into the terminal:

```
module unload netcdf_c
module load anaconda3
pip install --user /work/um0878/users/olemke/rtcourse/python/*.whl
git clone --branch=wise2021 /work/um0878/users/olemke/rtcourse/arts-lectures.git
```

If no errors occured, type "`exit`" and close the browser tab.

Switching to JupyterLab

JupyterLab offers a more comfortable interface than the standard Jupyter Notebooks. To access JupyterLab, change the string ".../preset/tree/..." in the browser URL to ".../preset/lab/tree/...":



After a short loading animation, the JupyterLab user interface will appear.

Opening a notebook

Navigate in the file browser in the sidebar on the left to the exercise subfolder, e.g.

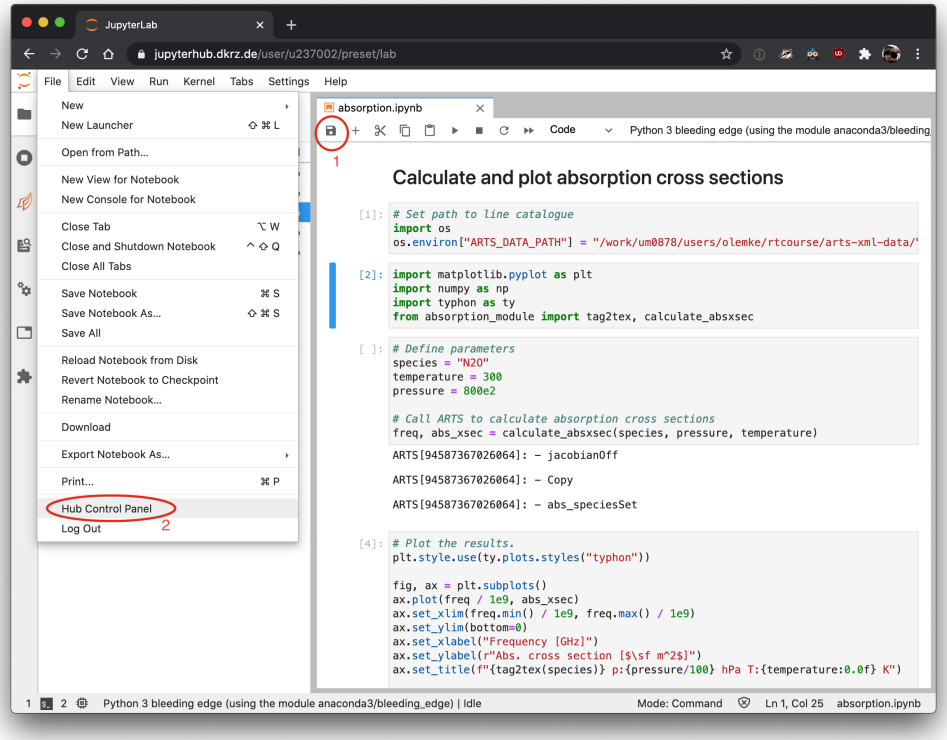
```
arts-lectures/exercises/01-molecule_spectra/
```

and open the first exercise notebook "`absorption.ipynb`".

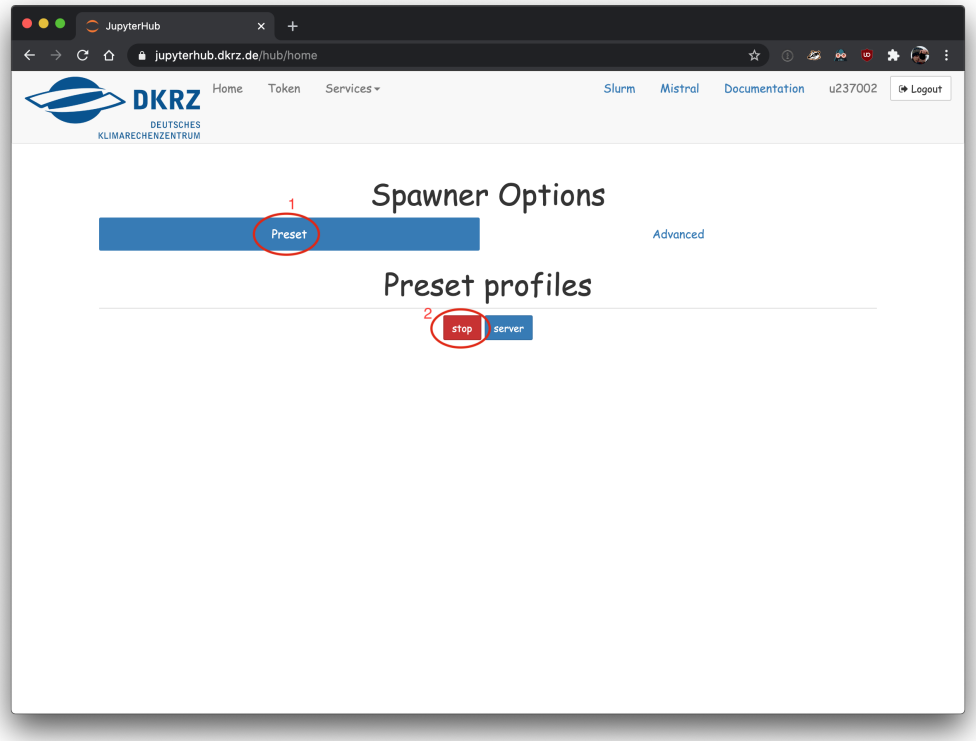
Closing the notebook and server

After you're done for the day, save your notebook and **shut down** the notebook server. The notebook will be shutdown automatically after 12 hours. To save compute time (which will be accounted to the project even when the notebook is running in the background), please always close it down after you're done.

First save your notebook by clicking on the disk icon in the toolbar, then go to the Hub Control Panel:

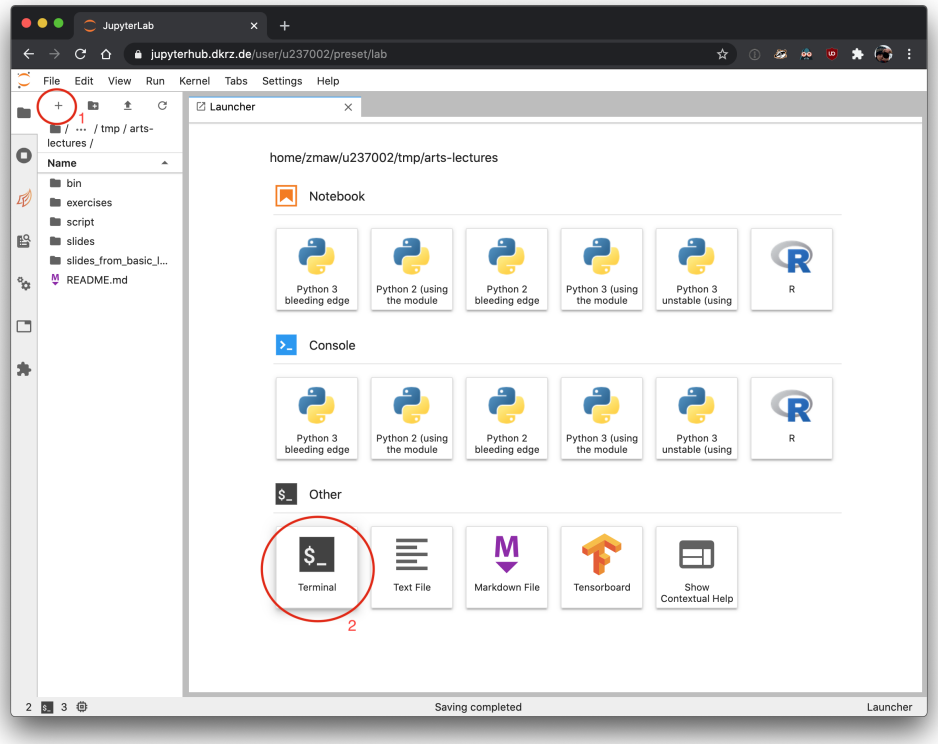


And stop the notebook server



Update your local copy of arts-lecture

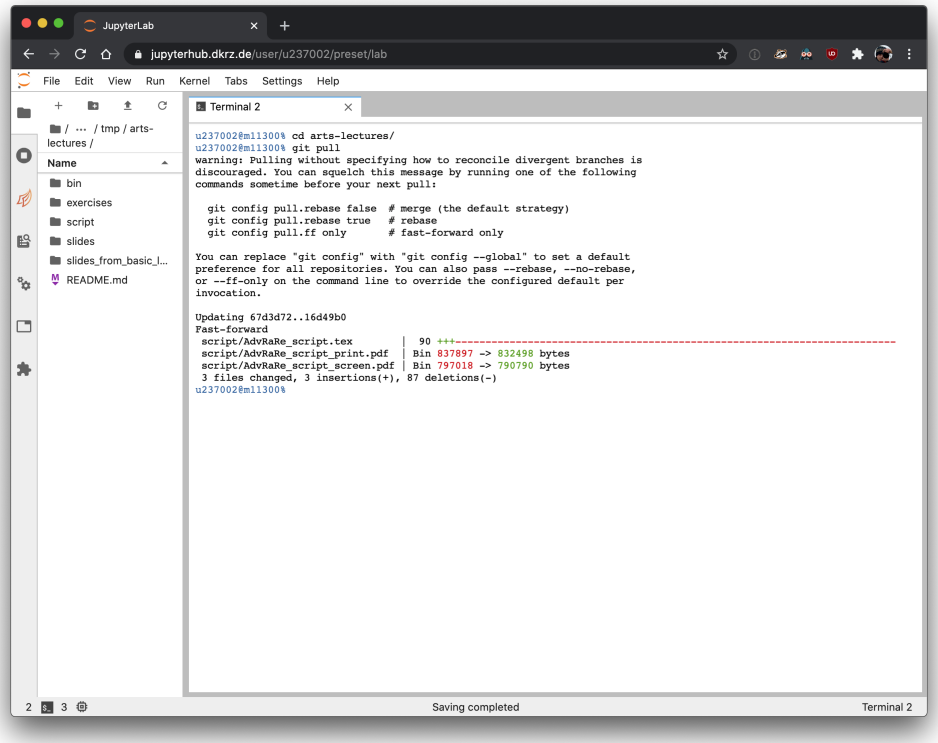
During the course, new exercises and updates are added to the arts-lecture repository. To update your local version of arts-lectures, open a terminal in JupyterLab.



In the terminal go to your arts-lectures folder and run "git pull"

```
cd arts-lectures
git pull
```

You can ignore the warning message from git. At the end of the output, you see which files have been updated. In the example below, the lecture script has received updates:



Greenhouse and Climate Sensitivity - ARTS Lectures - Introduction

Click on the image below to open the pdf for the slides of the ARTS lectures introduction.

Web location

This document can be found at https://collaboration.cen.uni-hamburg.de/display/RaRe/ARTS+Lecture