

MASTER X

M4.8 PAYLOAD MISSION AND APPLICATIONS

TO-DO LIST BEFORE MODULE

PROFESOR: LUCIA SOTO SANTIAGO

ASIGNATURA: PAYLOADS AND MISSIONS APPLICATIONS (PLMA)



WS2: Browsing Landsat data

1. Install QGIS from <https://qgis.org/download/>
2. Create account in USGS <https://earthexplorer.usgs.gov/>
3. Download any TIF file and open in QGIS.

WS1: Correction of Level-1 data

1. Install Panoply (requires Java) from
<https://www.giss.nasa.gov/tools/panoply/download/>
2. Download Anaconda (Python) from <https://www.anaconda.com/download>
Requires user creation.
3. Install netCDF4 package (see following slide)
4. Download notebook and data from
https://github.com/lsofouc3m/masterx_public
5. Test run l1b Jupyter Notebook

Download anaconda (~1.1Gb)

<https://www.anaconda.com/download>

Choose Your Download

Windows

Mac

Linux

Anaconda Distribution

Complete package with 8,000+ libraries, Jupyter, JupyterLab, and Spyder IDE. Everything you need for data science.

[↓ Windows 64-Bit Graphical Installer](#)

Miniconda

Minimal installer with just Python, Conda, and essential dependencies. Install only what you need.

[↓ Windows 64-Bit Graphical Installer](#)

Install netCDF4 package (1/2)

File Help

ANACONDA.NAVIGATOR

Home Environments Learning Community

Installed applications ON base (root) Channels

Anaconda Toolbox 4.20.0 Anaconda Assistant JupyterLab supercharged with a suite of Anaconda extensions, starting with the Anaconda Assistant AI chatbot. Launch	Anaconda Cloud Notebooks Cloud-hosted notebook service from Anaconda. Launch a preconfigured environment with hundreds of packages and store project files with persistent cloud storage. Launch	anaconda_powershell_prompt 1.1.0 Opens a PowerShell instance with conda activated (requires menuinst 2.1.1 or greater). Launch	anaconda_prompt 1.1.0 C:\ Opens a terminal instance with conda activated (requires menuinst 2.1.1 or greater). Launch	JupyterLab 4.4.7 An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture. Launch	jupyter 7.4.5 Notebook Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis. Launch
PyCharm Community 2023.2.1 An IDE by JetBrains for pure Python development. Supports code completion, listing, and debugging. Launch	Qt Console 5.7.0 PyQt GUI that supports inline figures, proper multiline editing with syntax highlighting, graphical calltips, and more. Launch	Spyder 6.1.0 Scientific PYthon Development EnviRonment. Powerful Python IDE with advanced editing, interactive testing, debugging and introspection features Launch	EduBlocks edu Web-based coding platform from Anaconda designed for students. Learn Python coding through an interactive, block-based visual environment. Launch	IBM watsonx watsonx™ IBM watsonx is an enterprise-ready AI platform including a data store, model builder, and AI model management and monitoring. Launch	ORACLE Cloud Infrastructure Oracle Data Science Service OCI Data Science offers a machine learning platform to build, train, manage, and deploy your machine learning models on the cloud with your favorite open-source tools Launch
PyScript  Code and share Python in the Browser. A vibrant community of makers, builders, and hackers building the next frontier of Python-powered web applications. Launch	PythonAnywhere  Host, run, and code Python in the cloud! Get started for free. Launch				

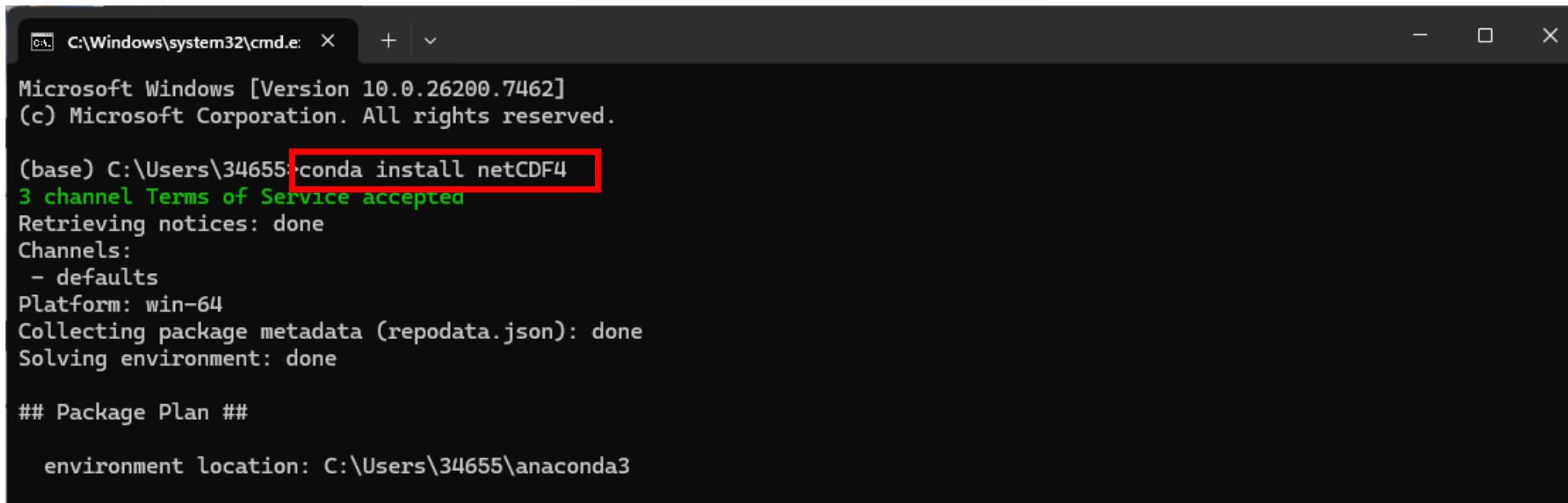
Anaconda Quick Start Environments
Jump into pre-configured environments by project or industry. Clean dependencies, faster development
[Launch Your Environment](#)

Documentation
[Anaconda Blog](#)

X O Y F

Install netCDF4 package (2/2)

Run „conda install netCDF4” in the command window



The screenshot shows a Windows Command Prompt window with the title bar "C:\Windows\system32\cmd.exe". The window displays the following text:

```
Microsoft Windows [Version 10.0.26200.7462]
(c) Microsoft Corporation. All rights reserved.

(base) C:\Users\34655\conda install netCDF4
3 channel Terms of Service accepted
Retrieving notices: done
Channels:
- defaults
Platform: win-64
Collecting package metadata (repodata.json): done
Solving environment: done

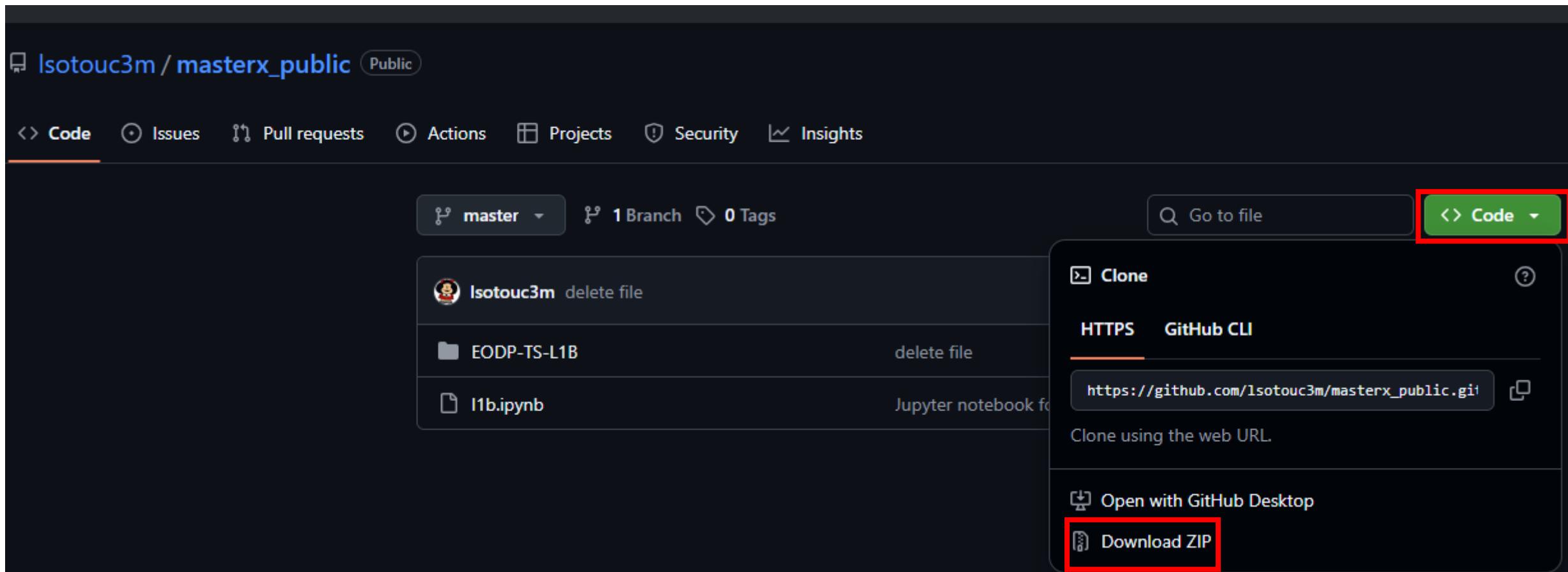
## Package Plan ##

environment location: C:\Users\34655\anaconda3
```

The command "conda install netCDF4" is highlighted with a red rectangle.

Download l1b notebook and data

https://github.com/lsotouc3m/masterx_public



Launch jupyter notebook (1/3)

File Help

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Installed applications on base (root) Channels

Anaconda Cloud Notebooks anaconda_powershell_prompt anaconda_prompt JupyterLab jupyter Notebook PyCharm Community

Cloud-hosted notebook service from Anaconda. Launch a preconfigured environment with hundreds of packages and store project files with persistent cloud storage.

anaconda_powershell_prompt: Opens a PowerShell instance with conda activated (requires menuinst 2.1.1 or greater).

anaconda_prompt: Opens a terminal instance with conda activated (requires menuinst 2.1.1 or greater).

JupyterLab: An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture.

jupyter Notebook: Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis.

PyCharm Community: An IDE by JetBrains for pure Python development. Supports code completion, linting, and debugging.

IP[y]: Spyder EduBlocks watsonx ORACLE Cloud Infrastructure PyScript

Qt Console: Scientific Python Development Environment. Powerful Python IDE with advanced editing, interactive testing, debugging and introspection features.

EduBlocks: Web-based coding platform from Anaconda designed for students. Learn Python coding through an interactive, block-based visual environment.

watsonx: IBM watsonx is an enterprise-ready AI platform including a data store, model builder, and AI model management and monitoring.

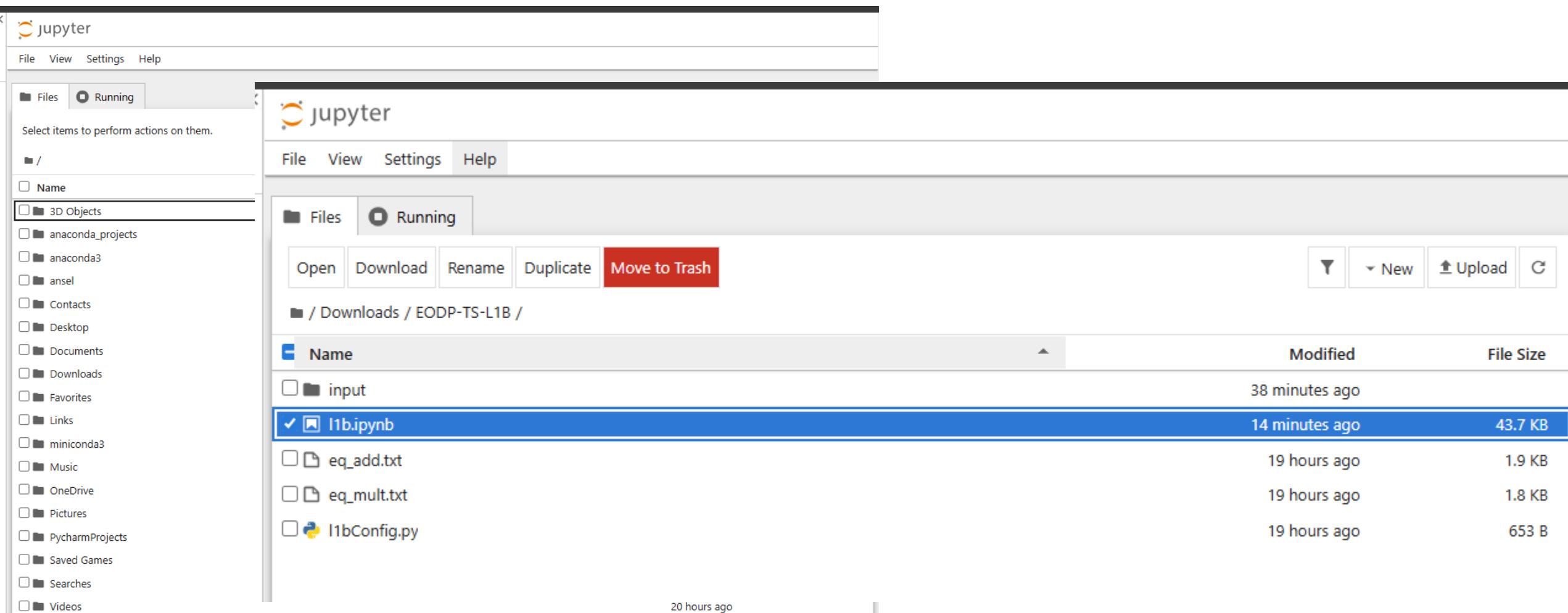
ORACLE Cloud Infrastructure: Oracle Data Science Service

PyScript: OCI Data Science offers a machine learning platform to build, train, manage, and deploy your machine learning models on the cloud with your favorite open-source tools.

Anaconda Quick Start

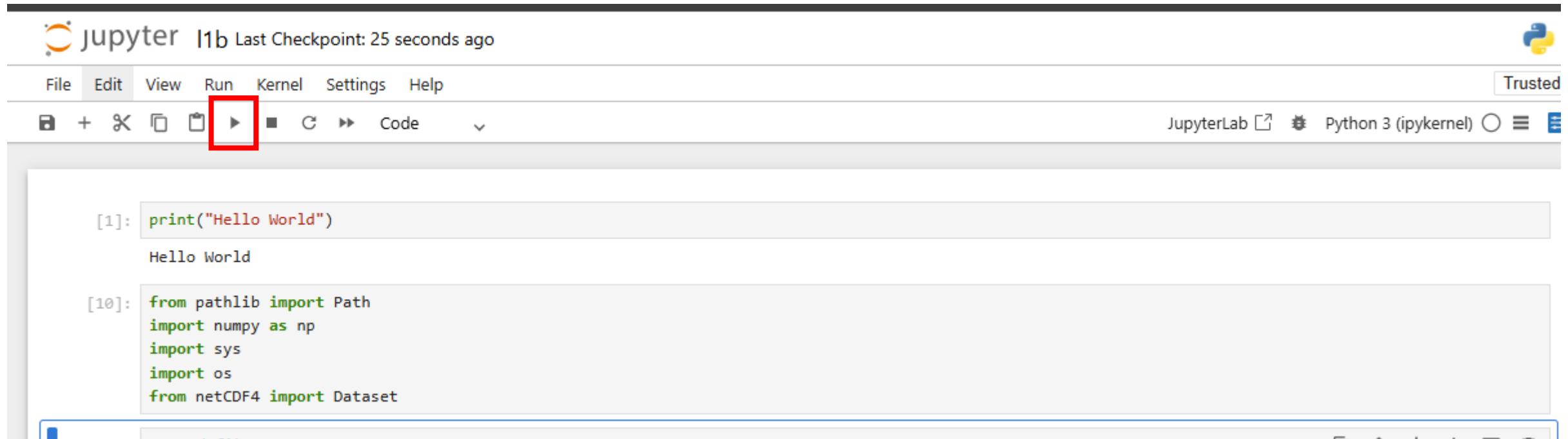
Launch jupyter notebook (2/3)

Navigate in the Files to wherever you have downloaded the l1b notebook and data. Click on „l1b.ipynb” and it will open the notebook in your browser.



Launch jupyter notebook (3/3)

Run a hello world and make sure you don't get any errors importing the following packages:



The screenshot shows a Jupyter Notebook interface. At the top, there's a toolbar with various icons: File, Edit, View, Run, Kernel, Settings, Help, and a Python logo icon labeled "Trusted". Below the toolbar, there's a toolbar with icons for file operations like new, open, save, and run, followed by a "Code" dropdown menu. A red box highlights the "Run" button (a right-pointing triangle). To the right of the toolbar, it says "JupyterLab" and "Python 3 (ipykernel)". The main area contains two code cells. The first cell, labeled [1], contains the code `print("Hello World")` and its output "Hello World". The second cell, labeled [10], contains the code for importing several modules: `from pathlib import Path`, `import numpy as np`, `import sys`, `import os`, and `from netCDF4 import Dataset`.

```
[1]: print("Hello World")
Hello World

[10]: from pathlib import Path
      import numpy as np
      import sys
      import os
      from netCDF4 import Dataset
```