Running TEMPO on Atmos

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Instructions

- Four slides of numbered instructions
- Summary:
  - go to https://atmos-portal.hesc.epa.gov
  - Open Jupyter Hub
  - Open a Notebook
    - Click play
    - Review code and notes
  - Repeat
- If something isn't working go to a break out room

1. Instructions numbered in green boxes.

Notes in grey.

Draws attention

Lots of pictures!

Start Jupyter on Atmos

1) Connect to the EPA Network or VPN
2) Open a web browser
3) Go to https://atmos-portal.hesc.epa.gov

4) Click OnDemand HPC Portal
5) Login with your LAN ID and password

6) Click Jupyter

7) Configure
- v3.2.9
- Login Q
- Your group

8) Click Launch
9) Wait, then Connect

Go to Tempo Training Notebook 1

1. Click File

File | Edit | View | Run | Kernel | Git | Diagram | Tabs

Menu

Launch Button

File Browser

Filter files

/

Name | Last Modi
asm — 8 hours ago
asm_old — 2 months ago
asm1 — 8 hours ago
asm1_old — 2 months ago

2. Choose Open from Path…

← → C ⌂ 🔒 atmos-portal.hesc.epa.gov/node/sin

File | Edit | View | Run | Kernel | Git | Diagram | Tab

New ▸
New Launcher — Ctrl+Shift+L

Open from Path…

New View for Notebook
New Console for Notebook
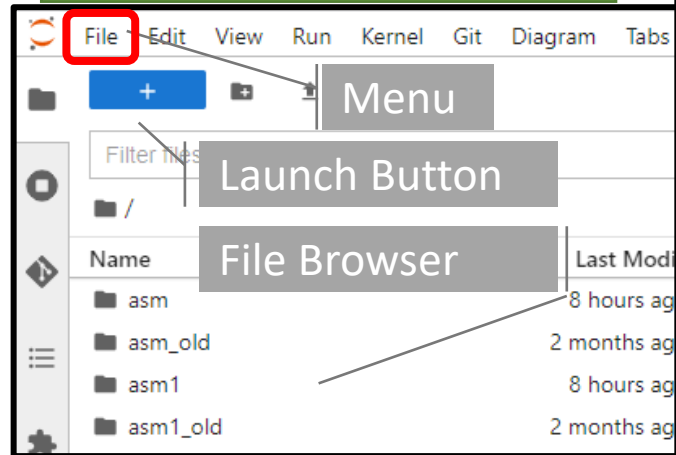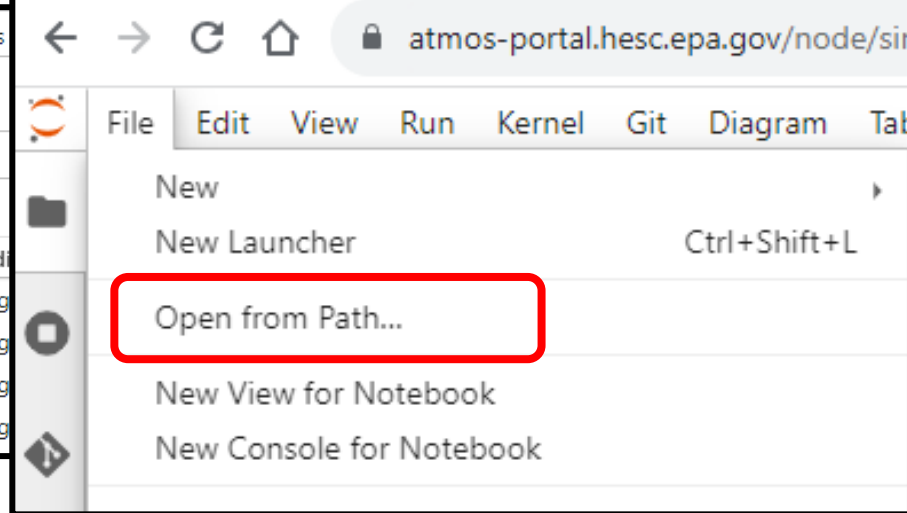
3. Enter /home/bhenders/tutorials/

Open Path

Path

/home/bhenders/tutorials/

Cancel | Open

4. Double Click pyrsig

geosciduus — 3 years ago
layalloc — 5 months ago
makeparallel — 3 years ago
OMI2GC — 7 years ago
pyrsig — 3 days ago
REGRID — 4 years ago
scriptascript — 10 months ago
SHP2NC — 5 years ago

5. Double Click tempo

/ … / tutorials / pyrsig /
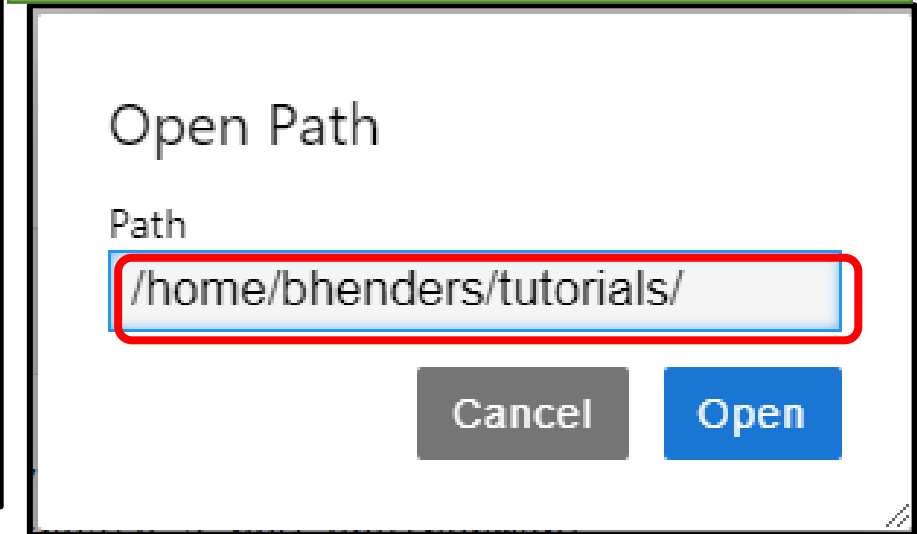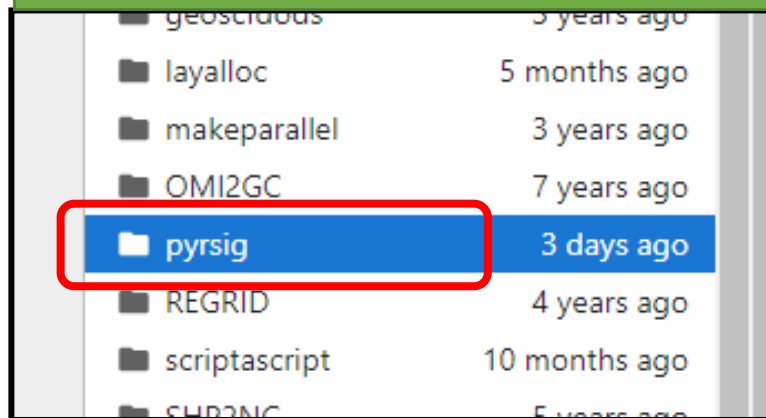
Name ▲ | Last Modified
tempo | 3 minutes ago
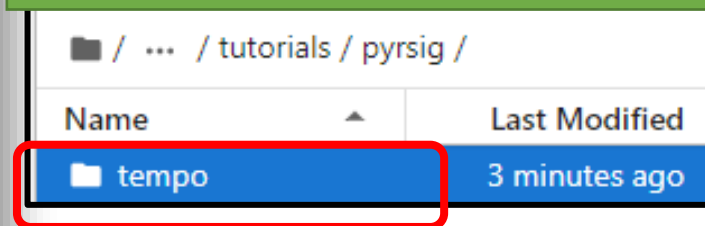
6. Double Click SetupEnvironment.ipynb

/ … / pyrsig / tempo /

Name ▲ | Last Modified
add_kernel.sh | 6 minutes ago
pyrsig_tempo.txt | 3 days ago
SetupEnvironment…. | 2 minutes ago
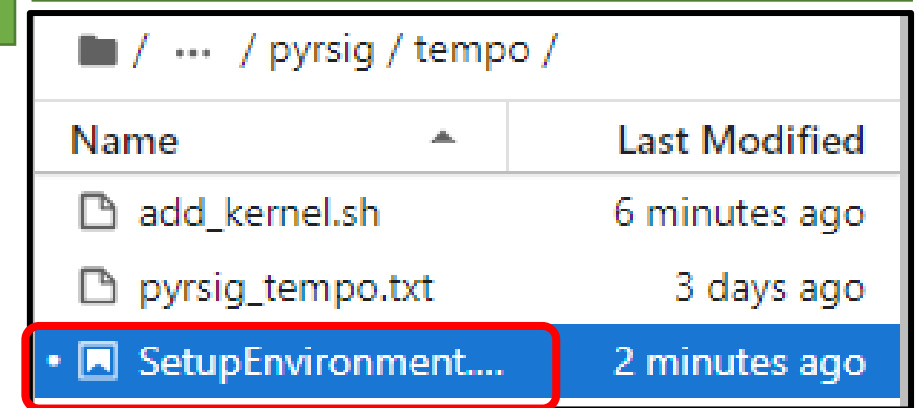
Configure Python Environment

- Configure system once for training
  - Common training environment
  - Not strictly necessary, more predictable.

- Notebooks have "cells"
  - Code or Markdown
  - Play button runs one "cell".
  - Code cells have output.

- This cell is a bash command to install a "Virtual Environment"

Cell status:
[ ] not run
[*] running
[1] run order

1) Play until Get Help code has [1]
2) Click play until Create Environment code has [2] before it

- Actual number (1 or 2) doesn't matter
- Final output should end:
Installed kernel spec tempo_env in /home/<user>/.local/share/jupyter/kernels/tempo_env

---

SetupEnvironment.ipynb

Markdown ⌄   git

Virtual Environment Setup

author: Barron H. Henderson
contributor: Jeff Willison

`add_kernel.sh` is a script that will create a "Virtual Environment on Atmos"

- First, get script usage with the `-h` command.
- Second, create a virtual environment for this training called tempo_env

Get Help

A cell input can contain Python (default) or bash

```
[1]:  %%bash
      ./add_kernel.sh -h

Usage ./add_kernel.sh [-h] [-y] ENV_DIR [ENV_NAME [REQUIREMENTS]]
     Install a Python virtual environment for use as a Jupyter Kernel

     -h : print usage help
     -y : answer yes to confirmation prompt
ENV_DIR : required path to create a new environment
ENV_NAME : optional str for the name of the kernel
REQUIREMENTS : optional path for required libraries.
```

A cell output can be text or a figure

Open Hands-on Notebook

1) Double Click
tempo_pyrsig.ipynb

2) Clear old results

3) Change "kernel" to
tempo_env

Kernel   Git   Diagram   Tabs   Settings   Help

Interrupt Kernel   I, I

Restart Kernel...   0, 0

Restart Kernel and Clear All Outputs...

SetupEnvironment.ipynb ×   tempo_pyrsig.ipynb

Markdown ⌄   git   ⚙ Python 3 ○

Filter files by name

▪ / ⋯ / pyrsig / tempo /

Name	Last Modified
add_kerne...	10 minutes ago
pyrsig_te...	3 days ago
SetupEnvir...	9 minutes ago
tempo_pyr...	a minute ago

3) Run the "cells" by
clicking play

Open in Colab

TEMPO via RSIG

author: Barron H. Henderson
date: 2023-04-26

Select Kernel

Select kernel for: "tempo_pyrsig.ipynb"

tempo_env   ⌄

Start Preferred Kernel
anaconda
basic38
gcei
gcpy
Python 3
tempo_env

Use No Kernel
No Kernel

This notebook uses TEMPO Proxy data from NASA via the EPA's Remote Sensing Information Gateway
(RSIG) via a python interface (pyrsig).

Example:

1. Make a time-series for a selected location.
2. Make a quick animated map for one scene

Why can't you save?
Whose directory are you in?
Any solutions under "File" menu?

https://gist.github.com/barronh/6faf2008a0cf0ac9e49543f31c300601

Compare your results to Github

Questions?

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