Installing Python and the relevant packages for the workshop

On Wednesday, 6/23/22, the Intro Course will feature a **Computational Physics Workshop** led by Dr. Nick Murphy and Dr. Erik Everson as part of the PlasmaPy collaboration.

In order to optimize the workshop window, we ask that all participants install the Anaconda Python environment by following the instructions below:

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Installing the Anaconda Python Environment

1. Download Anaconda Navigator for Windows, OSX, or Linux here.
2. Create a folder on your computer for the example notebooks.
3. Install Anaconda using the default options
4. Open the “Environments” tab, then select “Create”
5. Give the environment a name (eg. “INTROCOURSE”) and select Python 3.7 or higher (which should be the default). Wait for the environment to be created.
6. Click on the green arrow in the list of environments and select “Open Terminal” to open a terminal.
7. Install PlasmaPy by entering the command: “pip install plasmapy[all]”. Be sure it returns to the prompt after installation. After this has run successfully, you can close the terminal.
8. In Anaconda, open the “Home” tab and install Jupyter Notebook.
9. Download the test notebook and the proton radiography notebook to the folder you created.
10. Launch Jupyter Notebook, navigate to the test notebook file you downloaded, and open it.
11. Run the notebook by selecting “Cell > Run All” in the top menu.

Note: When you re-open Anaconda in the future, you will need to select the environment you created (eg. “SULI”) from the dropdown menu at the top of the home page.

Using an Existing Python Installation

If you already have a working python installation and are comfortable installing packages using pip, you can also install plasmapy manually with the terminal command

pip install plasmapy[all]

For the examples in this workshop, you will also need Jupyter notebook

pip install notebook

To launch Jupyter notebook, run the command

jupyter notebook

Jupyter notebook will then open in a browser (this may take a minute, especially the first time you run this command).

The Jupyter notebook server is now running continuously in your terminal, even if you close the browser window. To terminate the server, enter `ctrl+C` in the terminal.

To validate the installation, run the test notebook.

Files

test notebook

proton radiography notebook

Backup Option: Cloud Environment

If you are unable to successfully install Anaconda and PlasmaPy on your computer, you can run the example notebooks in the cloud here. We have a limited number of seats for this environment, so please run the notebooks on your own computer if you can!