Running the jupyter event display notebook (Visualise.ipynb) on uboonegpvm (09/09/2024)

The first 3 steps should be done once:

1. Ssh to your favorite uboonegpvm and install miniforge
   https://github.com/conda-forge/miniforge
   Follow the instructions in the link. This is required so you can use conda but if you already have some conda setup maybe you can skip this line.

2. Activate conda
   `source ~/.bashrc`
   Assuming you have conda setup in .bashrc
   conda should now be activated (you should have `(base)` at the start of the command line prompt).

3. Create a new conda environment. The basic steps are
   `conda create -n <ENV_NAME> python=3.11.4`
   `conda activate <ENV_NAME>`
   `pip install jupyter uproot ipympl termcolor`
   Other Python versions will likely work as well, but this one has been confirmed to work.

Now you're ready to start jupyter sessions. By opening a tmux session you can keep using the same session, but occasionally you might need to repeat this to restart the session.

4. From your location of choice (for example, /exp/uboone/app/users/USERNAME), open a tmux session
   `tmux new-session -s jupyter_session`

5. In the new session, activate conda
   `source ~/.bashrc`

6. Activate the environment you defined in step 3:
   `conda activate <ENV_NAME>`

7. Start a jupyter notebook:
   `jupyter notebook --no-browser --port <PORT_NUM>`
   (<PORT_NUM> should just be a 4 digit number)

8. Wait for it to run. When it stops running you'll get a URL in the format
   `http://localhost:<PORT_NUM>/?token=<TOKEN>`
   Copy it.

9. In a separate terminal on your local machine, run the following command
   `ssh -NL <PORT_NUM>:localhost:<PORT_NUM> <USER>@uboonegpvm0X.fnal.gov`
   It's important to ssh to the same gpvm you opened the session in

10. After sshing, nothing should happen, just paste the copied URL in your local web browser's URL bar.

11. You should now have an open jupyter session in your local browser!

12. Open Visualise.ipynb and good luck

13. (You can detach from the session in the gpvm by pressing `ctrl+b` then pressing `d`)