**< *MCP Gain Generic.ipynb* > Guide**

* Install **Jupyter Notebook** via **Anaconda** (if you do not already have it).
  + How to install [**Anaconda**](https://docs.anaconda.com/anaconda/install/index.html).
  + How to install [**Jupyter Notebook**](https://jupyter.org/install)(in this order).
* Clone **pyMAP** onto the user’s local environment.
  + Follow the link [here](https://github.com/jonbowr/pyMAP).
  + Graphical user interface, application

    Description automatically generatedCopy the link by clicking the “Copy” button (or you can simply download the ZIP file and extract them into your environment.) NOTE: Without cloning you won’t be able to push changes.
  + A screenshot of a computer

    Description automatically generated with medium confidenceIn the user’s desired directory, type in the following prompt in the command window.
  + Now **pyMAP** is available in **python**.
* Install the following packages directly from Jupyter Notebook by typing the following command in a cell inside a Jupyter Notebook: ***!{sys.executable} -m pip install <package name>***

Graphical user interface, text, application

Description automatically generated

* + *numpy*
  + *pandas*
  + *scipy*
  + *matplotlib*
  + *periodictable*
* Now the **MCP\_Gain\_Generic.ipynb** document is ready to be used. Open the document named **MCP\_Gain\_Generic.ipynb**. NOTE: It is a good practice to copy and save analysis documents in the same environment as where all the data files are stored, for easier navigation.
* Graphical user interface, text, application

  Description automatically generatedWhile we have successfully installed the necessary packages, it is important to execute the following command in Jupyter Notebook for **pyMAP** to properly operate: ***sys.path.append*(r’<where pyMAP package is cloned>’)**.
* How to run specific test results:
  + Inside the **MCP\_Gain\_Generic.ipynb** document, in the **Input parameter** cell, specify which test to run.
  + ***dat\_nam*** is where you input the desired test name (including the test date), e.g., *['emv1\_unhsplat\_tof\_functional\_mcp\_gain2\_20221206\_ILO\_RAW\_CNT']*. NOTE: It is case-sensitive.
  + ***plt\_grps*** contains a list of the variables you wish to display on the plots. Just remove from the list if you want to deselect certain elements, i.g., *‘tof\_rate[cts/s]’:[‘TOF0’, ‘TOF1’, TOF2’]* will only plot *TOF0, TOF1,* and *TOF2*, not *SILVER*.
  + ***use\_x*** contains a list of independent variables you wish to plot against to.
  + A picture containing text

    Description automatically generatedExample:
* Follow **MCP\_Gain\_Generic\_notes.ipynb** for more information.