EXERCISE Charge Collection

OBJETIVES:

Probe the strip structure of the detector and how the charge is sharing between strip

https://colab.research.google.com/drive/1ILuP5fa14sg_wKrUNi30tgMIZ6XfIbpW#scrollTo=u_KIsNU_Ede1
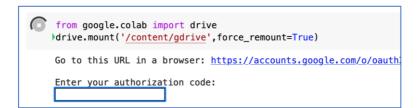
INITIAL STEPS:

1. Copy the notebook to your google Colab account (*File --> Save a Copy in Drive*)
2. Go to your drive and open the copied file, located in your *Colab Notebooks* folder

THE ANALYSIS PROGRAM:

Prepare the working environment
- Mount your driver
  You should enter your authorization code from the URL showed

```
from google.colab import drive
drive.mount('/content/gdrive',force_remount=True)

Go to this URL in a browser: https://accounts.google.com/o/oauth
Enter your authorization code:
[                    ]
```

- Create directory "EASY-ChargeCollection" in your google drive unit
- Copy the data from the drobox

Import the libraries

Define Class GTimer (to print number of events process every second)

Define Class to process the event

For each event
- <u>read</u>: event number, Raw Data (ADCs), channel number, pedestal and noise
- return: Signal (AGCs), Signa/noise and Common Noise

Option

- Define file for Pedestal
- Define files for Data
- Define Number of files to process (== Laser steps)
- Define First File (== first laser step)
- Interval of channel to plot

Main Loop to process the data

- Run over the all files, one for each Laser step
- For each laser step
  - Read data and get Signal (ADCs), Signa/noise and Common Noise
  - Calculate mean charge in each channel of the interval of channel to considered.

Plot charge in the defined range of channels vs laser position