Plots of Hall experiment

1 In-lab Plots list.

We use the notation of the instructions.

- From part 0: The first plot (I_p, U_p). Do linear fit. Use the linear regression function from here

```
from scipy.stats import linregress
res = linregress(xData, yData) # use linear regression
print("The slope is {:.3f} \nThe intercept value is {:.3f}
".format(res.slope,res.intercept) ) # print the results of the
regression
```

  Measure the slope and from it determine the **electrical resistance** R. And show the linear fit on the same plot.
- From Part 1: The second plot is $U_H(I_p)$.
- From Part 2: The third plot is $U_H(B)$, where B – is the **magnetic field**.
- From Part 3: The fourth plot is $R(B)$. And $R(B^2)$ to get the linear dependence and use linear regression function.

2 Temperature dependence

Important: Set zero current. Heat the sample. Check the voltage on the Hall probes. If it is more than 5mV, talk with the lab instructor.

If the voltage is OK, you don't need to wait until the sample is cold: set the current, 25-30mA, press the heat button again, and measure.

Note: Part 4,5 need to be recorded using phone camera. **Charge your phones!**