Interferometry Analysis Run 1-Copy1

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```python
import pandas
import numpy as np
#import matplotlib.pyplot as plot
from bokeh.plotting import figure, output_notebook, show



import pandas as pd
import scipy
from scipy import optimize
from scipy import stats
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
from bokeh.plotting import figure, output_notebook, show
import math
import scipy.optimize as opt
output_notebook(hide_banner=False)
%ls
```

```python
#Defining arrays

to = pandas.read_csv('2 Optical Try 3.csv')
sto = to.iloc[:,0].values                    #time, in seconds
v1 = to.iloc[:,1].values                     #voltage for port 1
v2 = to.iloc[:,2].values                     #voltage for port 2

op = pandas.read_csv('Optical and Pressure Try 3.csv')
sop = op.iloc[:,0].values                    #time, in seconds
v = op.iloc[:,1].values                      #voltage 2
pr = op.iloc[:,2].values                      #pressure 2

t = np.zeros(len(sto))
i = 0
while i<len(sto):
    t[i] = v1[i]+v2[i]
    i += 1
```

```
In [ ]:  #plot of error data
         p = figure(title="Error Data", x_axis_label='Time (s)', y_axis_label='Voltage (V)')
         p.circle(sto, v1, fill_color="white", size=4, legend="CH 1")
         p.circle(sto, v2, line_color="orange", legend = "CH 2")
         p.circle(sto, t, line_color="red", legend = "Sum")

         show(p)

In [ ]:  #plot of normal data
         p=figure(title="Data", x_axis_label='Time (s)', y_axis_label='Voltage (V)')
         p.circle(sop, v, fill_color="white")
         p.circle(sop, pr, line_color="orange")

         show(p)

In [ ]:  #and here we get parameters for pressure
         np.polyfit(sop, np.log(-pr), 1, rcond=None, full=False, w=None, cov=False)

In [ ]:  np.std(t)
```