Live 2025-10-20

October 22, 2025

1 Timestamps and CSV-Files continued

[1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

[2]:
```
X = pd.read_csv('../Labs/Data/4Stu_2023_0118_0127  DataWithToolInfo.csv',
            sep=';',
            parse_dates=['timestamp_skv'],
            dayfirst=True
            )
```

[3]:
```
X.describe()
```

[3]:

	timestamp_skv	timediff_skv	timediff_sensor	\
count	66703	66701.000000	66701.000000	
mean	2023-01-23 08:50:49.636001536	4.194825	4.194932	
min	2023-01-18 05:42:43.400000	0.000000	0.000000	
25%	2023-01-18 21:15:11.400000	1.000000	1.500000	
50%	2023-01-26 06:18:57.400000	2.000000	1.501000	
75%	2023-01-26 16:41:58.400000	2.000000	1.579000	
max	2023-01-27 17:09:30.400000	29740.000000	29739.913000	
std	NaN	173.450172	173.448476	

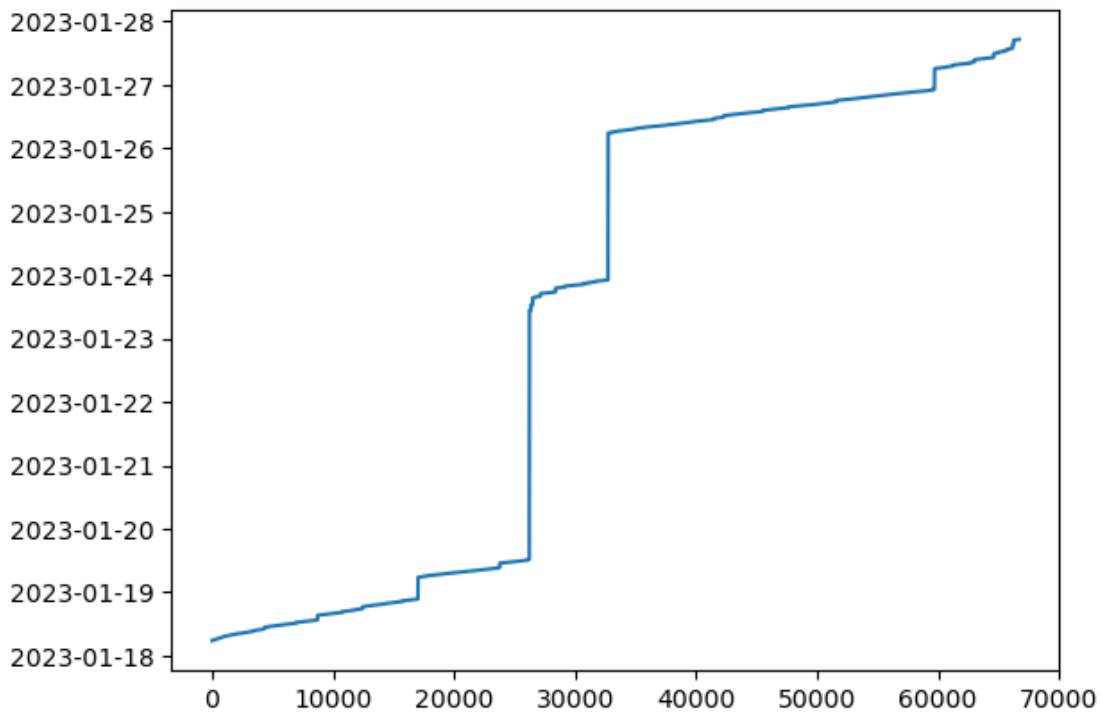
	SynchroDiff	ST_CH1_P_F0	ST_CH1_P_F1	ST_CH1_P_F2	ST_CH1_P_F3	\
count	66703.000000	66703.000000	66703.000000	6.670300e+04	66703.000000	
mean	0.376575	0.001839	0.000014	2.278736e-07	0.059784	
min	-1.495000	0.000683	0.000000	2.691119e-08	0.047685	
25%	0.016000	0.001313	0.000003	9.711246e-08	0.055610	
50%	0.380000	0.001824	0.000012	2.002658e-07	0.059784	
75%	0.753000	0.002269	0.000022	3.225647e-07	0.063793	
max	1.499000	0.004311	0.000064	1.240174e-06	0.078120	
std	0.526357	0.000597	0.000011	1.492868e-07	0.005909	

	ST_CH1_P_F4	ST_CH1_P_F5	…	5,36 SKV#4	5,92 SKV#4	\
count	66703.000000	66703.000000	…	66703.000000	66703.000000	
mean	0.046872	0.003595	…	5.337812	5.901364	

```
min        0.019543      0.000000  …      5.317000      5.881000
25%        0.029131      0.000119  …      5.336000      5.894000
50%        0.043598      0.001324  …      5.339000      5.900000
75%        0.060549      0.007996  …      5.341000      5.909000
max        0.150427      0.011690  …      5.377000      5.954000
std        0.020581      0.003780  …      0.005336      0.008304

       Sym Einstich SKV#4  Sym aussen SKV#4  Licht-Einstich frei SKV#4  \
count        66703.000000      66703.000000                66703.000000
mean             0.021423         -0.018979                  254.999945
min             -0.029000         -0.116000                  253.655000
25%              0.019000         -0.020000                  255.000000
50%              0.022000         -0.019000                  255.000000
75%              0.024000         -0.017000                  255.000000
max              0.036000          0.009000                  255.000000
std              0.004126          0.002629                    0.008157

       Beacon INT0028 - BME280_RH  Beacon INT0028 - BMP280_PRESS  \
count                66703.000000                   66703.000000
mean                    19.564815                     948.726821
min                     17.296875                     925.540000
25%                     18.634766                     938.790000
50%                     19.229492                     954.370000
75%                     20.621094                     955.510000
max                     23.205078                     968.820000
std                      1.342275                      11.696184

       Beacon INT0028 - BMP280_TEMP        pieces       tool io
count                  66703.000000  66703.000000  66703.000000
mean                      23.076179  24985.338501      0.095588
min                       21.170000   8467.000000      0.000000
25%                       22.790000  15031.000000      0.000000
50%                       23.090000  20569.000000      0.000000
75%                       23.520000  24897.000000      0.000000
max                       23.970000  73690.000000      1.000000
std                        0.554476  16945.246385      0.294027

[8 rows x 161 columns]
```

[5]:
```
plt.plot(X.index,X.timestamp_skv)
```

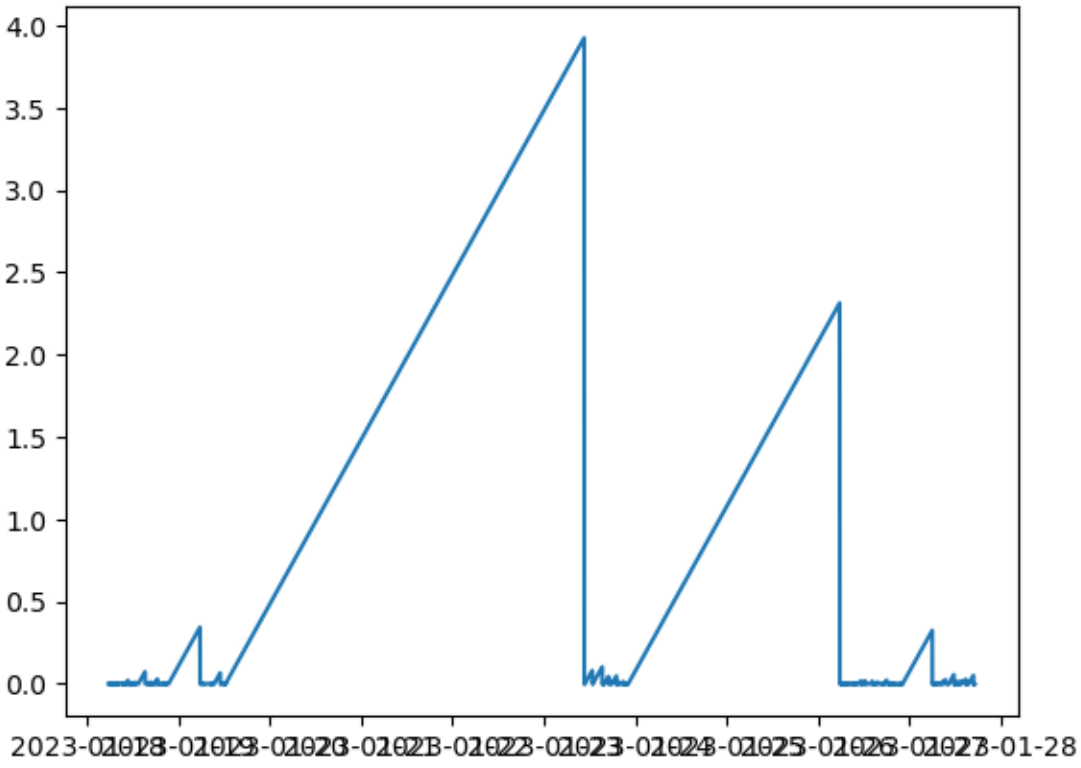
[5]:
```
[<matplotlib.lines.Line2D at 0x7f39d628a260>]
```



[6]:
```
delta = X.timestamp_skv.diff()/pd.Timedelta(days=1)
```

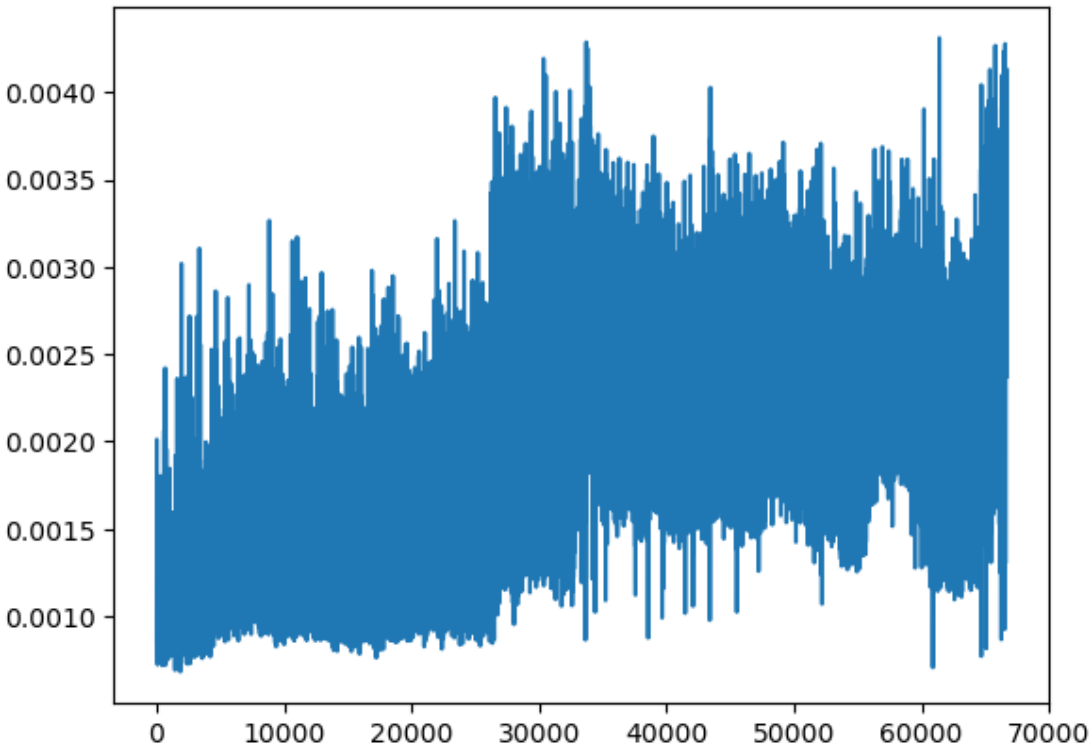
[8]:
```
plt.plot(X.timestamp_skv,delta)
```

[8]:
```
[<matplotlib.lines.Line2D at 0x7f39d3ff1e40>]
```



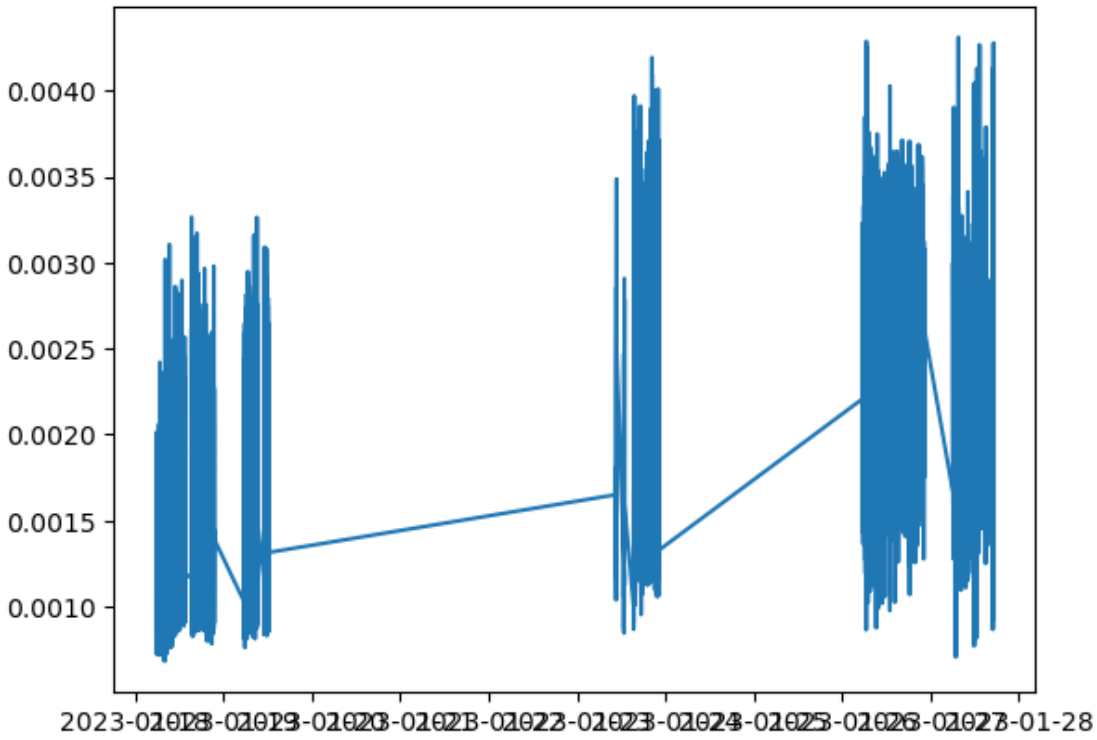
[9]:
```
plt.plot(X.index,X.ST_CH1_P_F0)
```

[9]: [<matplotlib.lines.Line2D at 0x7f39cb8b0520>]



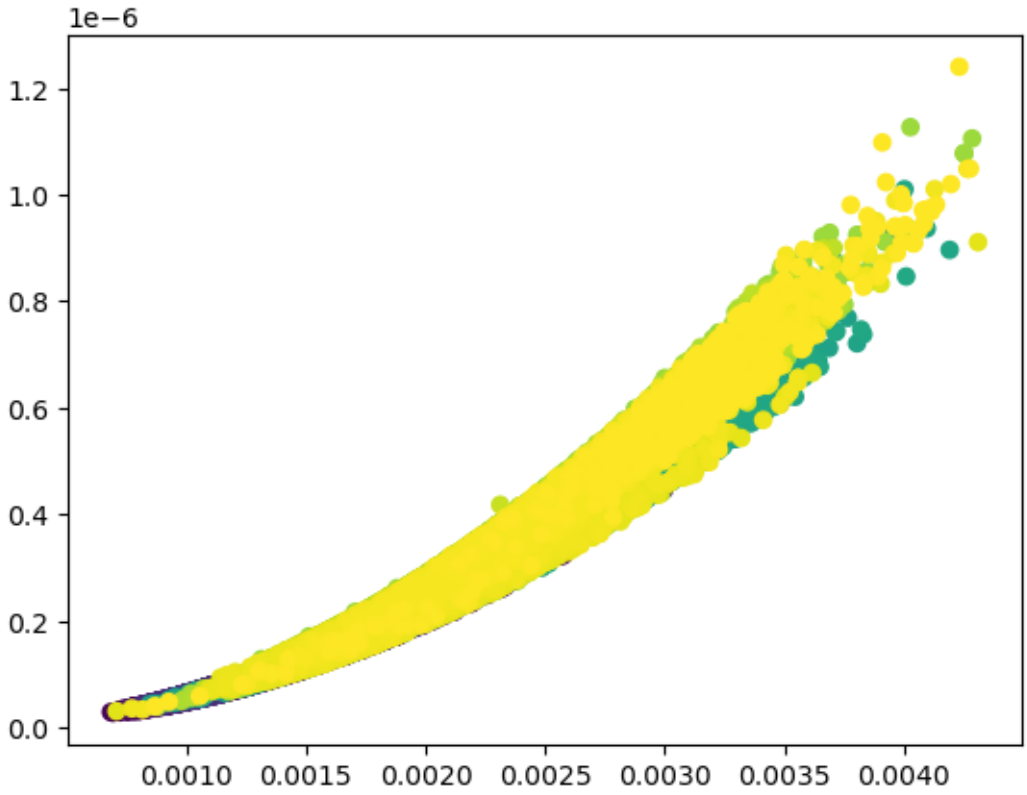
[10]:
```
plt.plot(X.timestamp_skv,X.ST_CH1_P_F0)
```

[10]:
```
[<matplotlib.lines.Line2D at 0x7f39cb89a9b0>]
```



[13]:
```
plt.scatter(X.ST_CH1_P_F0,X.ST_CH1_P_F2,c=X.timestamp_skv)
```

[13]: <matplotlib.collections.PathCollection at 0x7f39d3f584c0>


1e−6
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.0010
0.0015
0.0020
0.0025
0.0030
0.0035
0.0040

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