

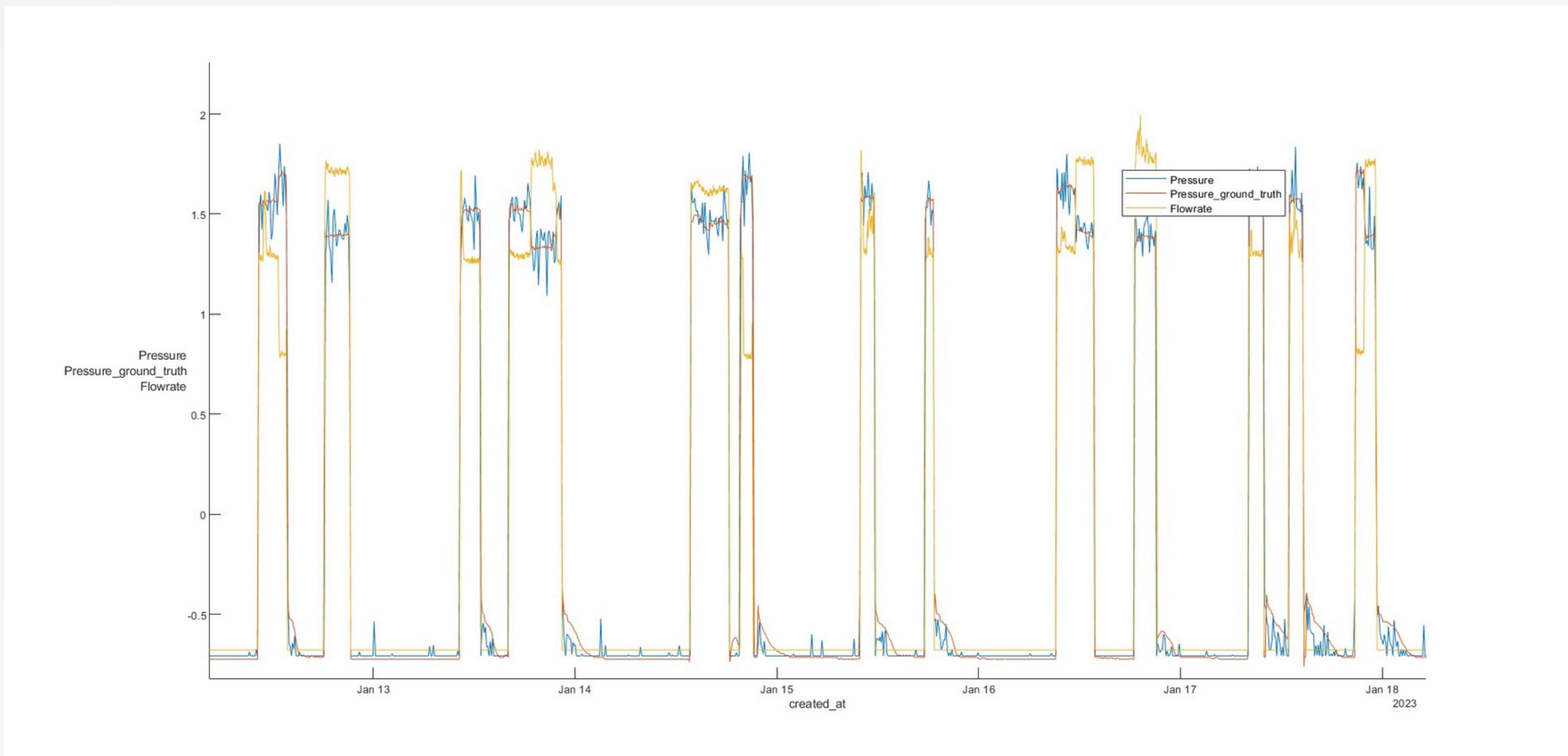


RESULTS FOR PAPER

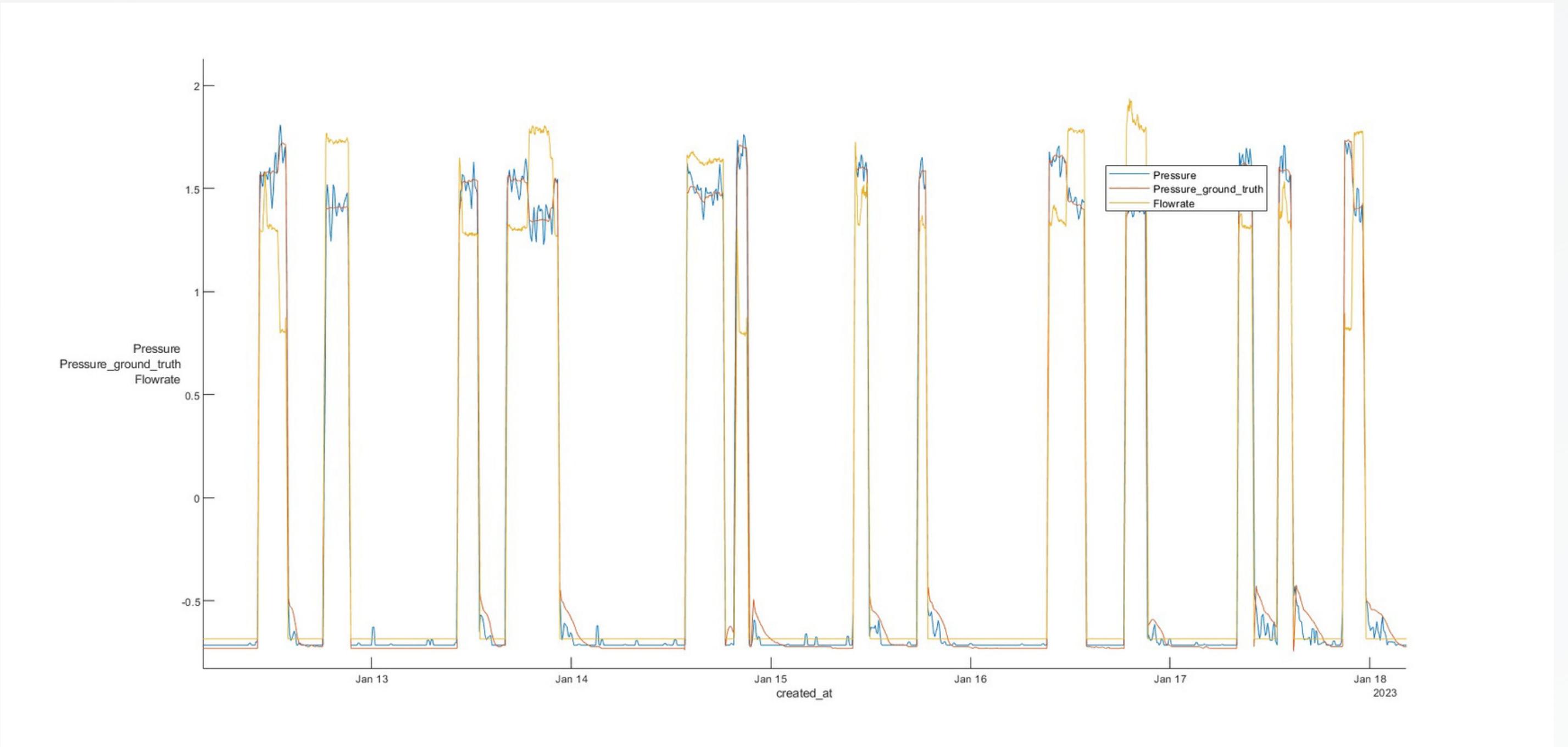
TIME SERIES PLOTS



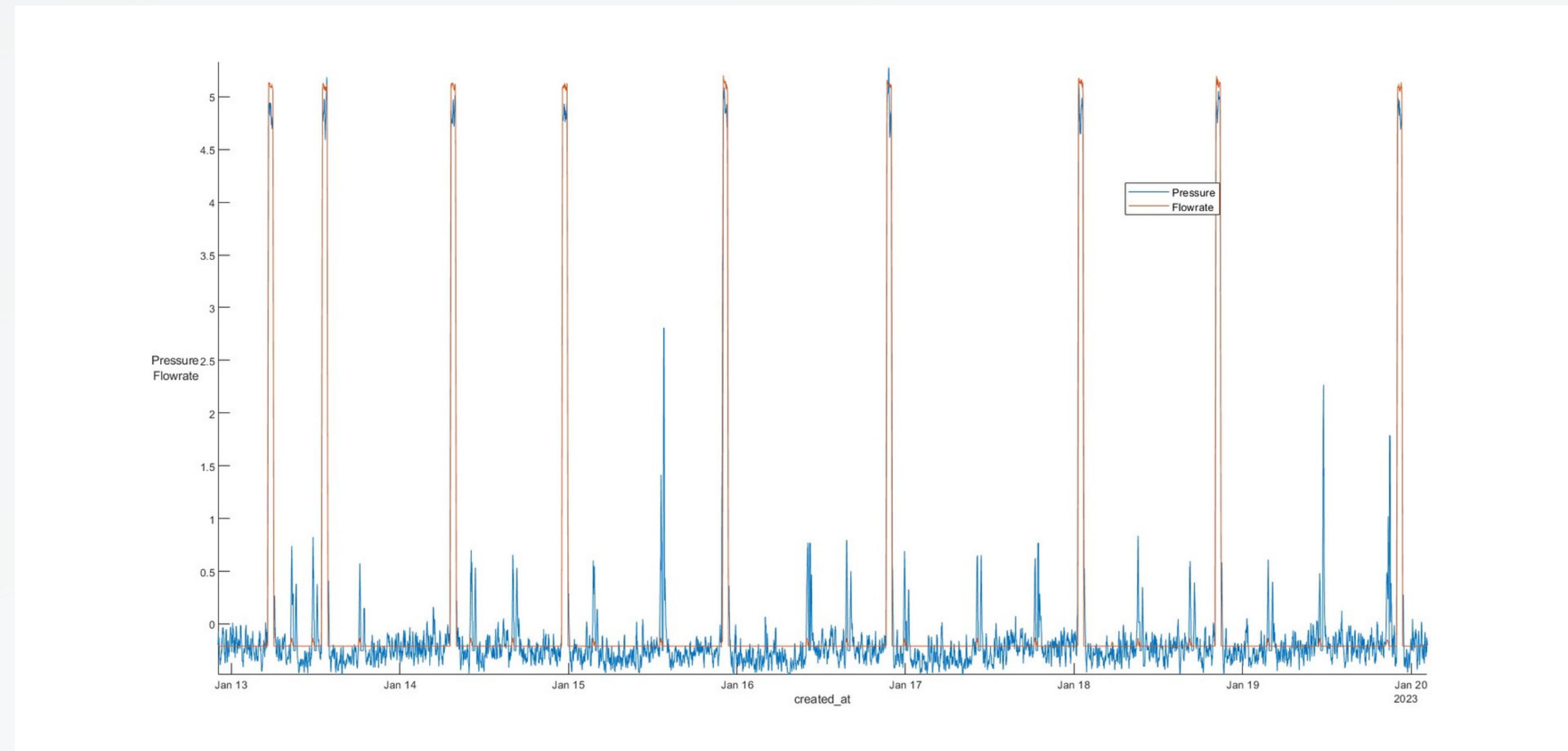
PH0100 (SMOOTHING WINDOW 5)



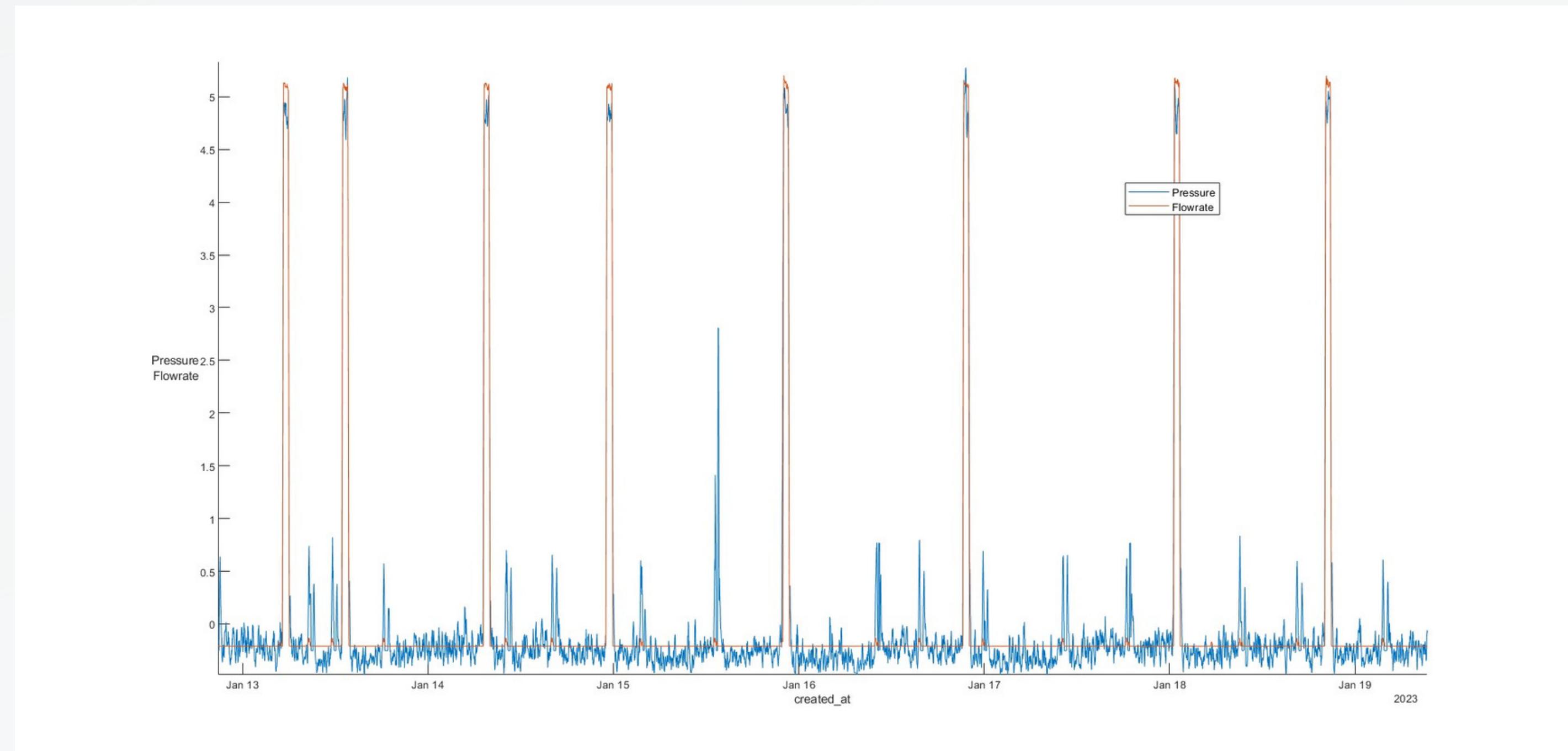
PH0100 (SMOOTHING WINDOW 10)



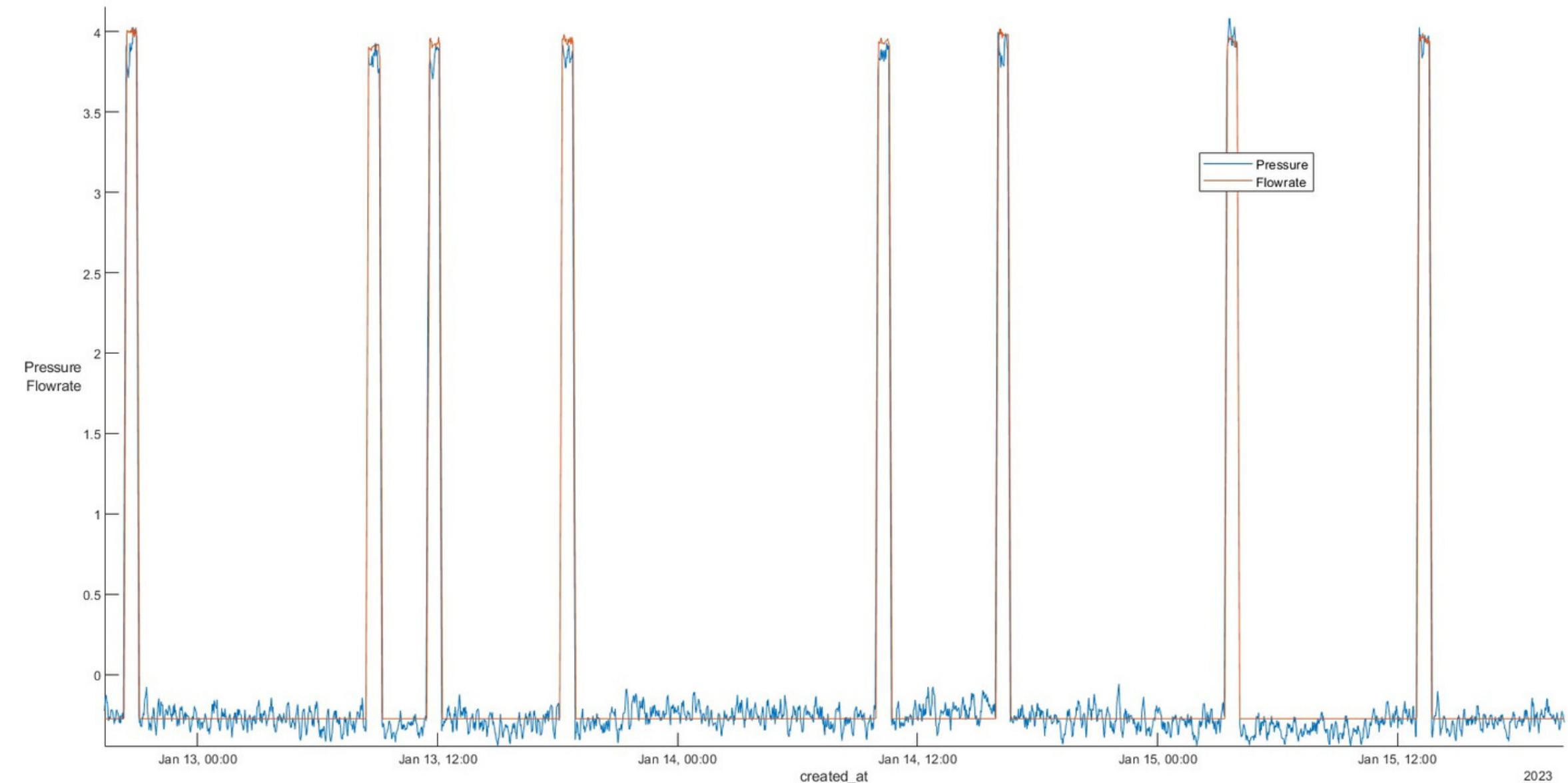
PH0302 (SMOOTHING WINDOW 5)



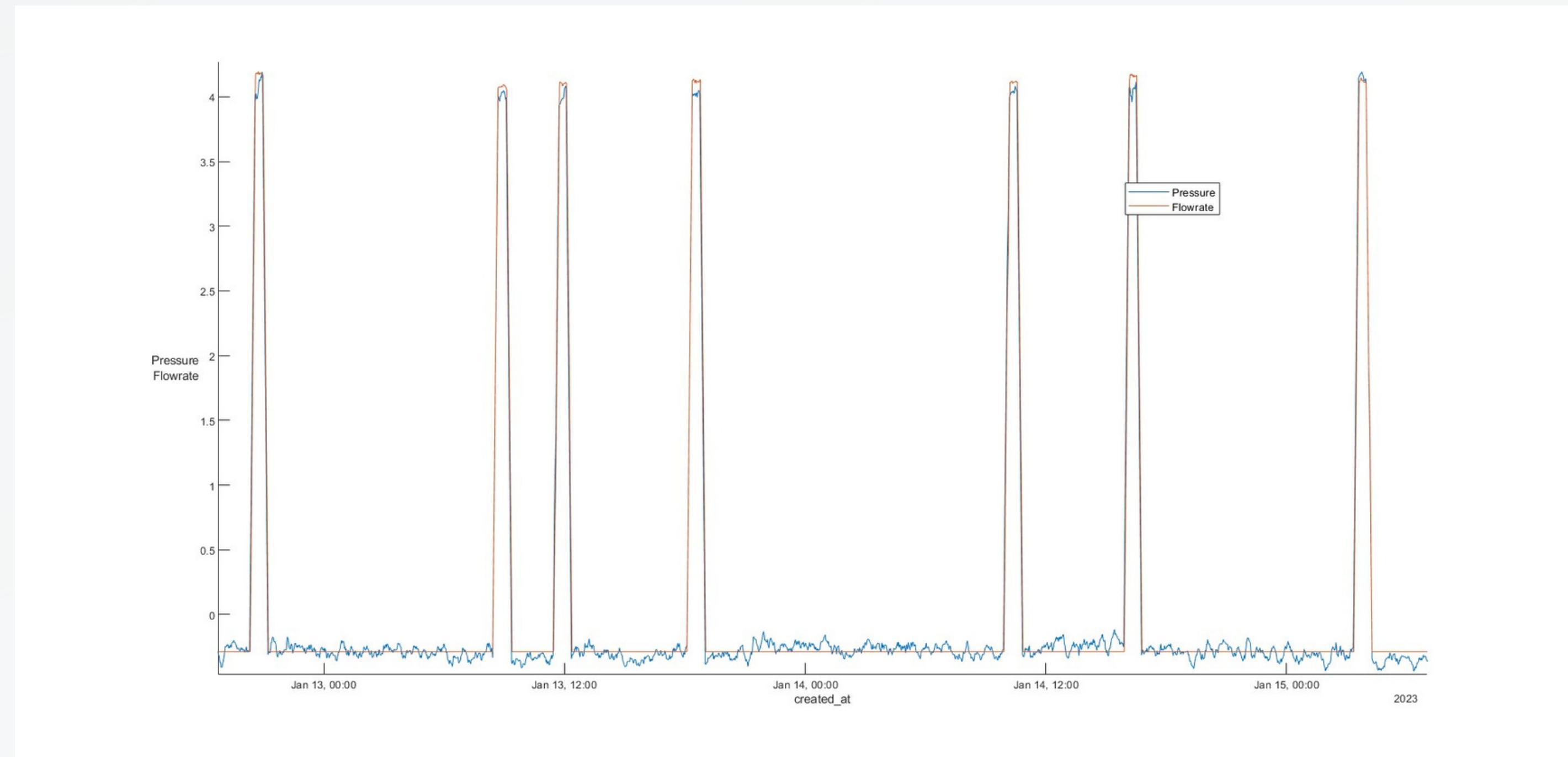
PH0302 (SMOOTHING WINDOW 10)



PH0303 (SMOOTHING WINDOW 5)



PH0303 (SMOOTHING WINDOW 10)



METRICS USED

CORRELATION COEFFICIENT

The Pearson correlation coefficient is the most common way of measuring a linear correlation. A number between -1 and 1 measures the strength and direction of the relationship between two variables.

SCORE

The coefficient of determination R2 is defined as $(1 - u/v)$ where u is the residual sum of squares $((y_{true} - y_{pred})^2).sum()$ and v is the total sum of squares $((y_{true} - y_{true.mean()})^2).sum()$

ERROR

Root mean square error is one of the most commonly used measures for evaluating the quality of predictions. It shows how far predictions fall from measured true values using Euclidean distance.



PH0100
SMOOTHING
WINDOW = 5

CORRELATION COEFFICIENTS

UNPROCESSED

PROCESSED WITH
SMOOTHING OF 5

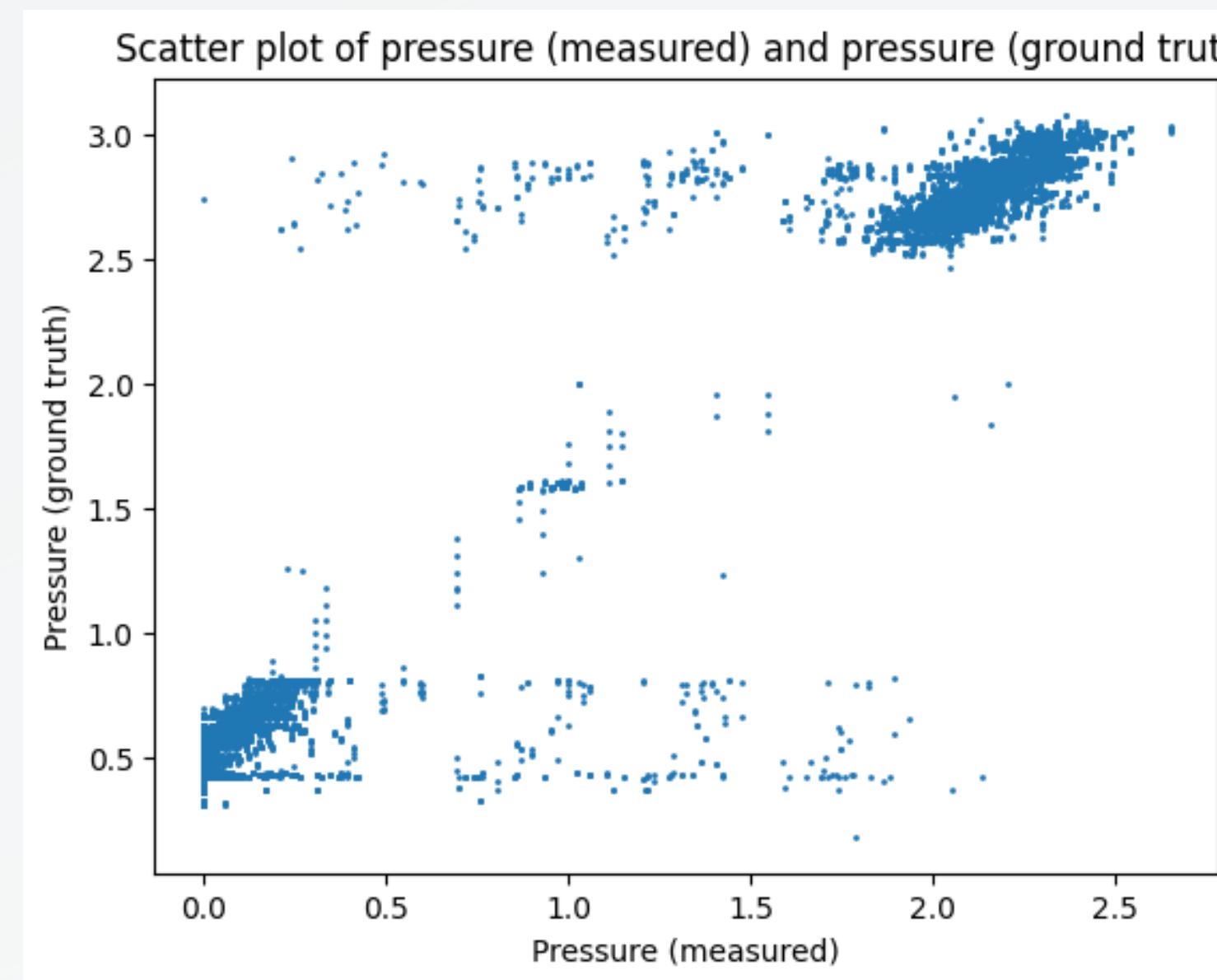
PROCESSED WITH
SMOOTHING OF 10

	Pressure_ground_truth	Pressure	Flowrate
Pressure_ground_truth	1.000000	0.982269	0.966274
Pressure	0.982269	1.000000	0.959941
Flowrate	0.966274	0.959941	1.000000

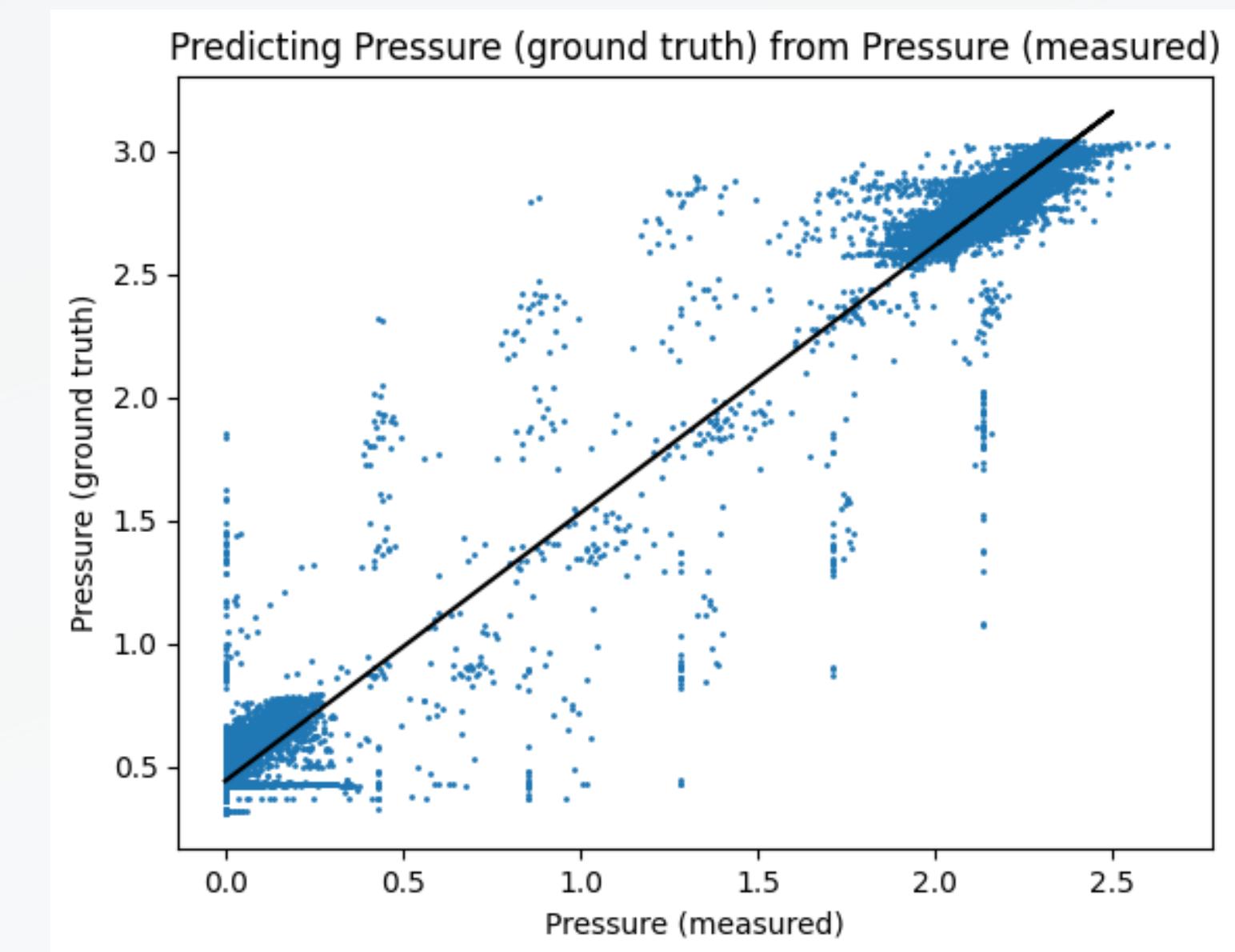
	Pressure_ground_truth	Pressure	Flowrate
Pressure_ground_truth	1.000000	0.993340	0.974059
Pressure	0.993340	1.000000	0.970617
Flowrate	0.974059	0.970617	1.000000

	Pressure_ground_truth	Pressure	Flowrate
Pressure_ground_truth	1.000000	0.995937	0.975262
Pressure	0.995937	1.000000	0.973779
Flowrate	0.975262	0.973779	1.000000

PRESSURE (MEASURED) VS (GT)

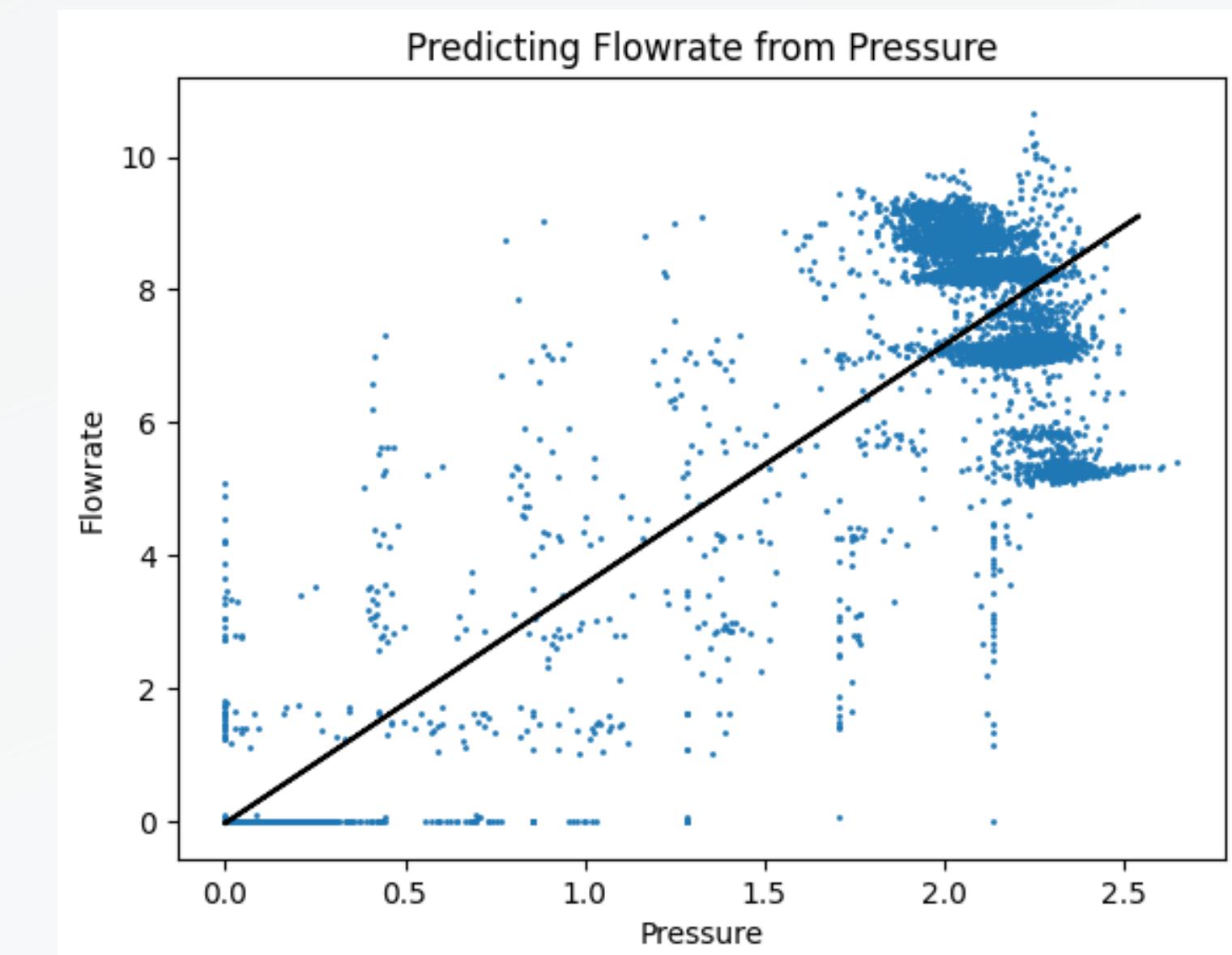
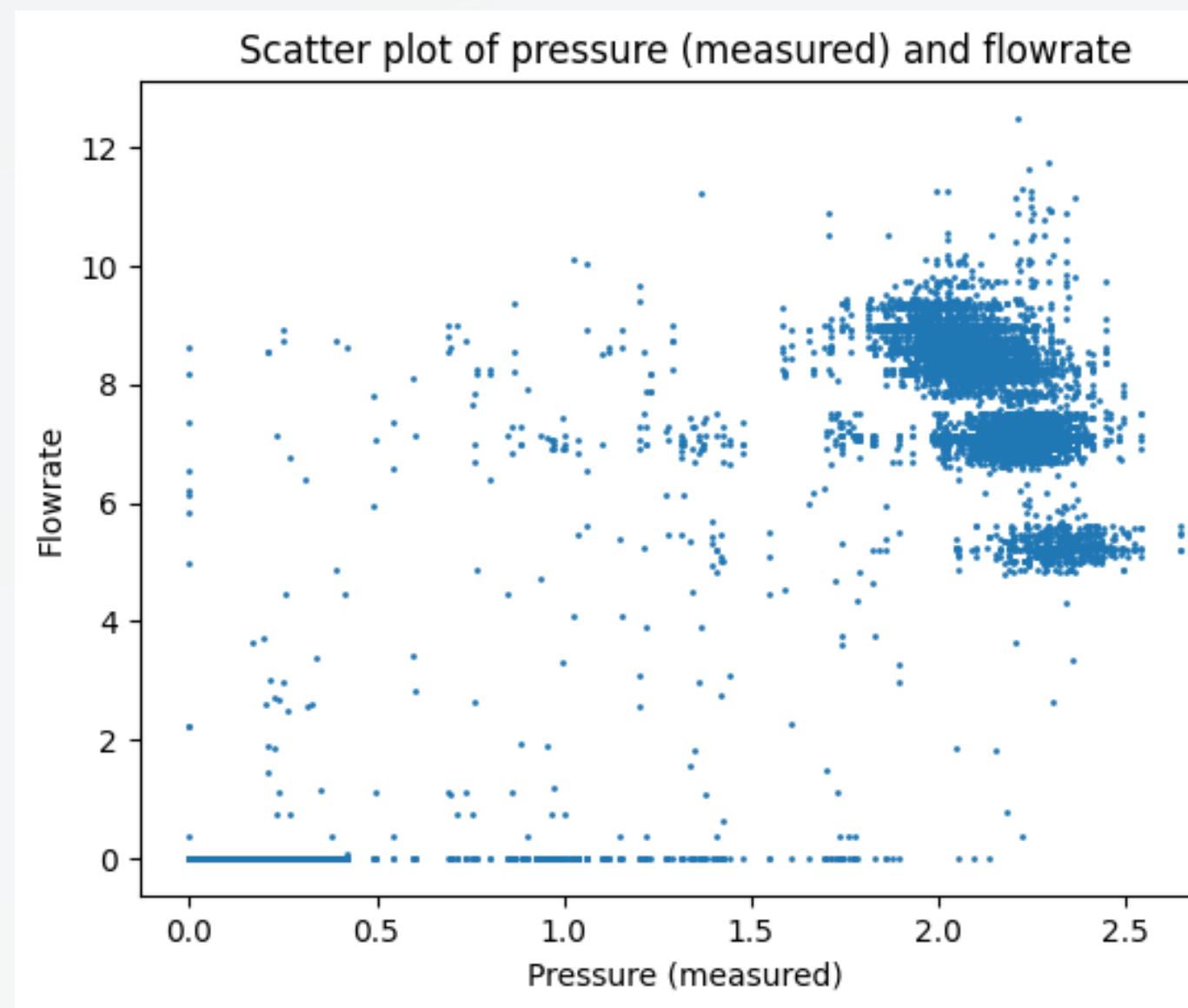


Score: 0.9784470772788989
Error: 0.15843271770551917



Score: 0.9868031661322006
Error: 0.12399849921589881

PRESSURE (MEASURED) VS FLOWRATE

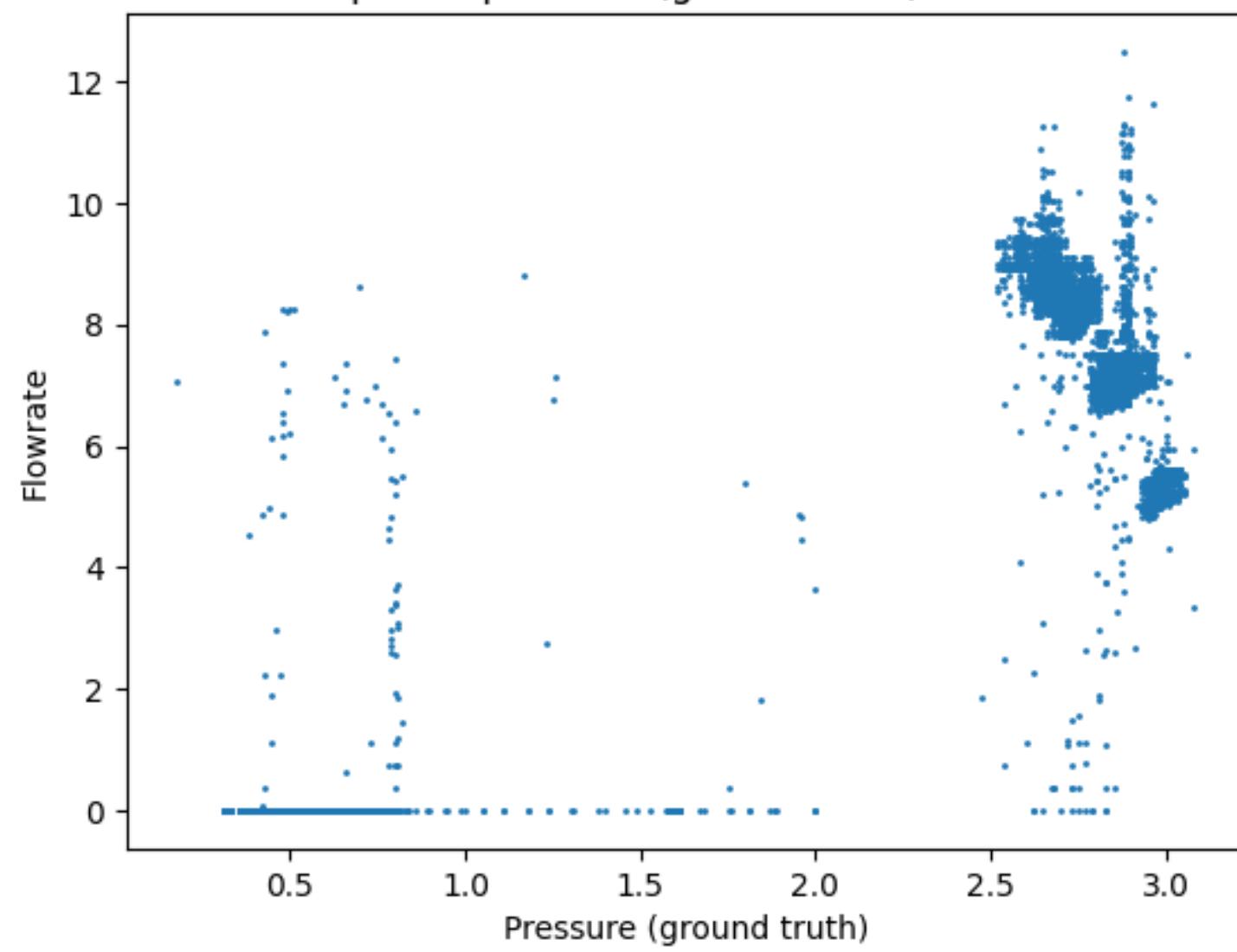


Score: 0.9273848332463576
Error: 0.9824531756960683

Score: 0.9395615174786887
Error: 0.9017794141694541

PRESSURE (GT) VS FLOWRATE

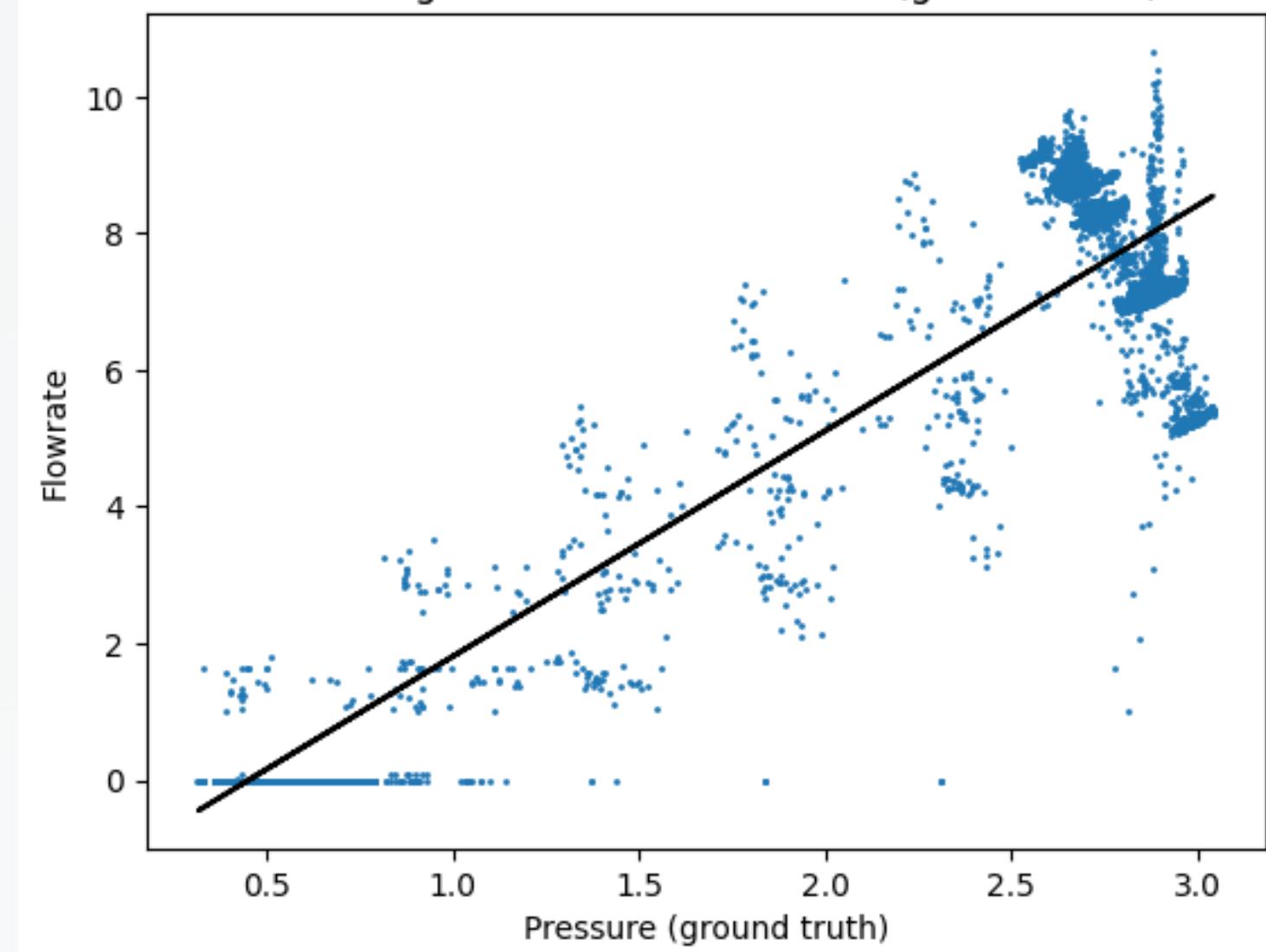
Scatter plot of pressure (ground truth) and flowrate



Score: 0.9370465995290206

Error: 0.9143956893350282

Predicting Flowrate from Pressure (ground truth)



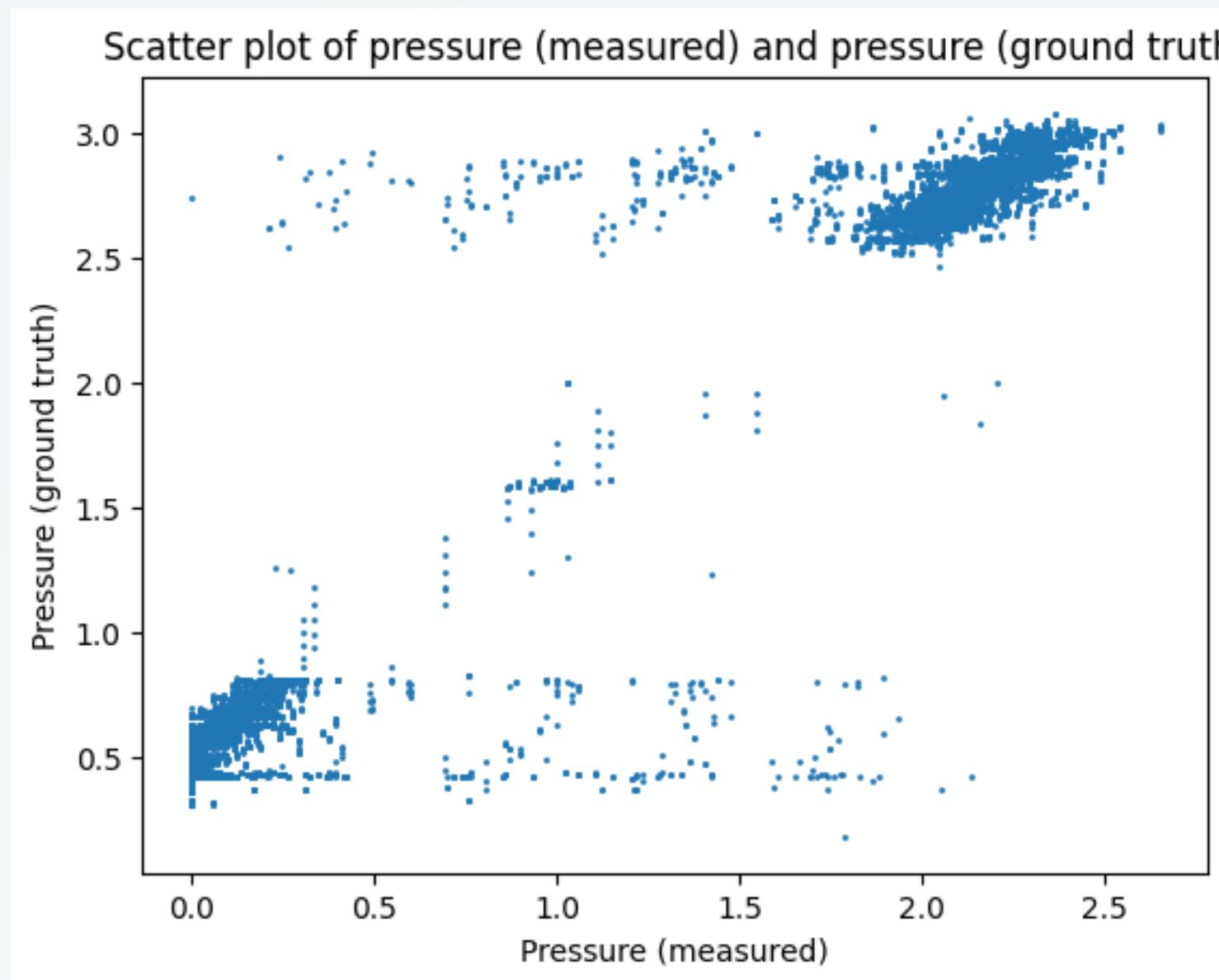
Score: 0.9528822881194433

Error: 0.8011875344173033

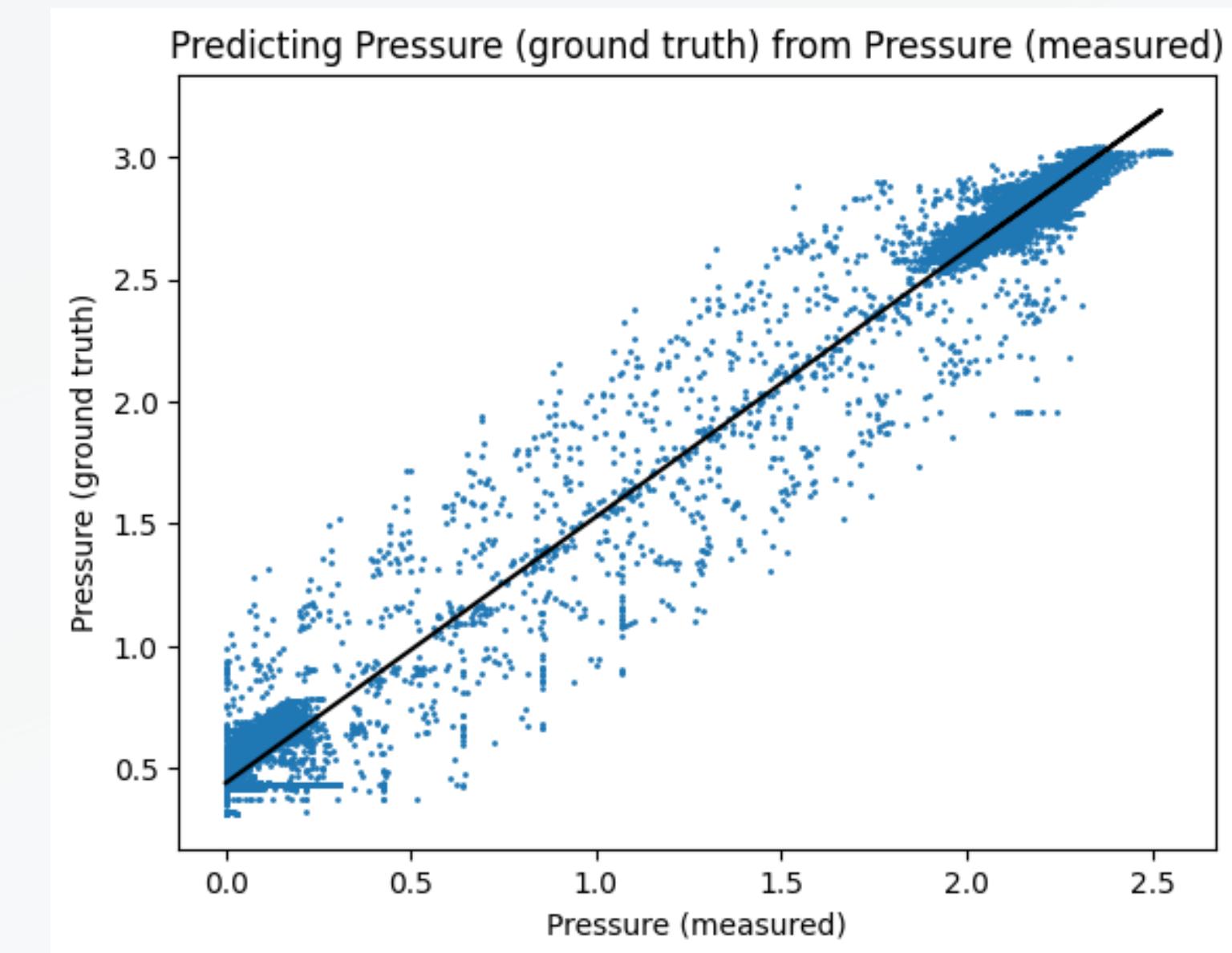


PH0100
SMOOTHING
WINDOW = 10

PRESSURE (MEASURED) VS (GT)



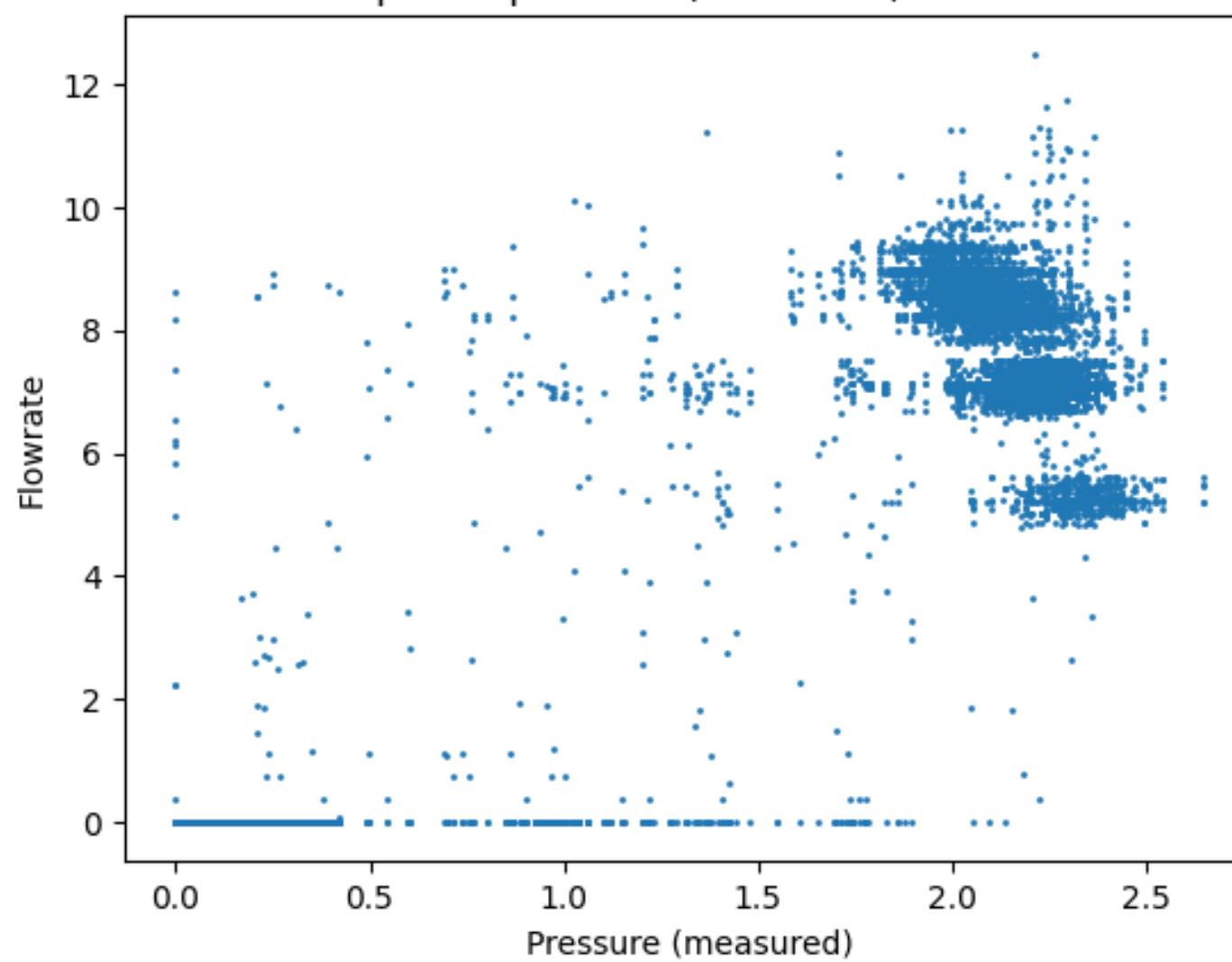
Score: 0.9784470772788989
Error: 0.15843271770551917



Score: 0.9925088668108416
Error: 0.09224413118821802

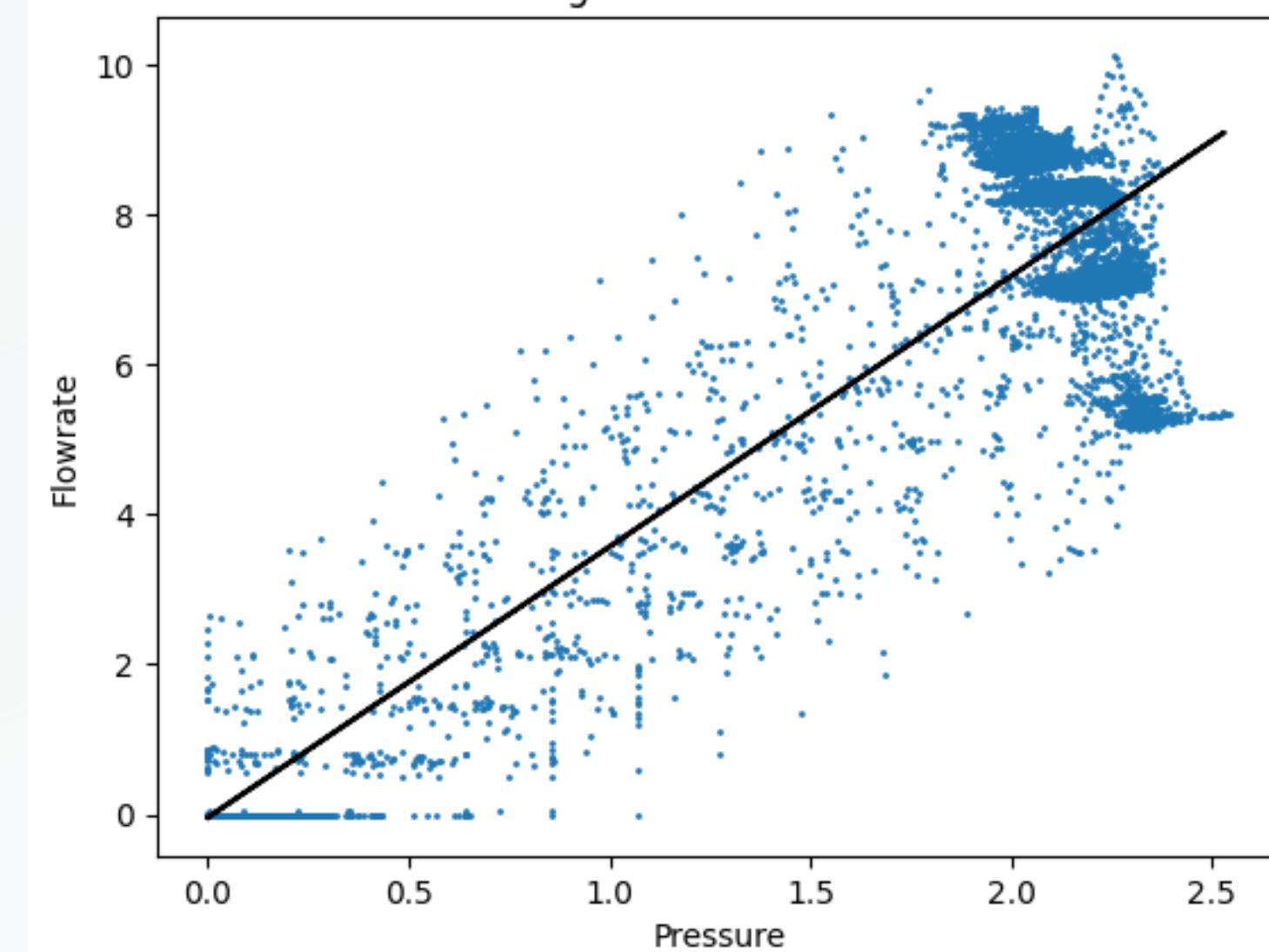
PRESSURE (MEASURED) VS FLOWRATE

Scatter plot of pressure (measured) and flowrate



Score: 0.9273848332463576
Error: 0.9824531756960683

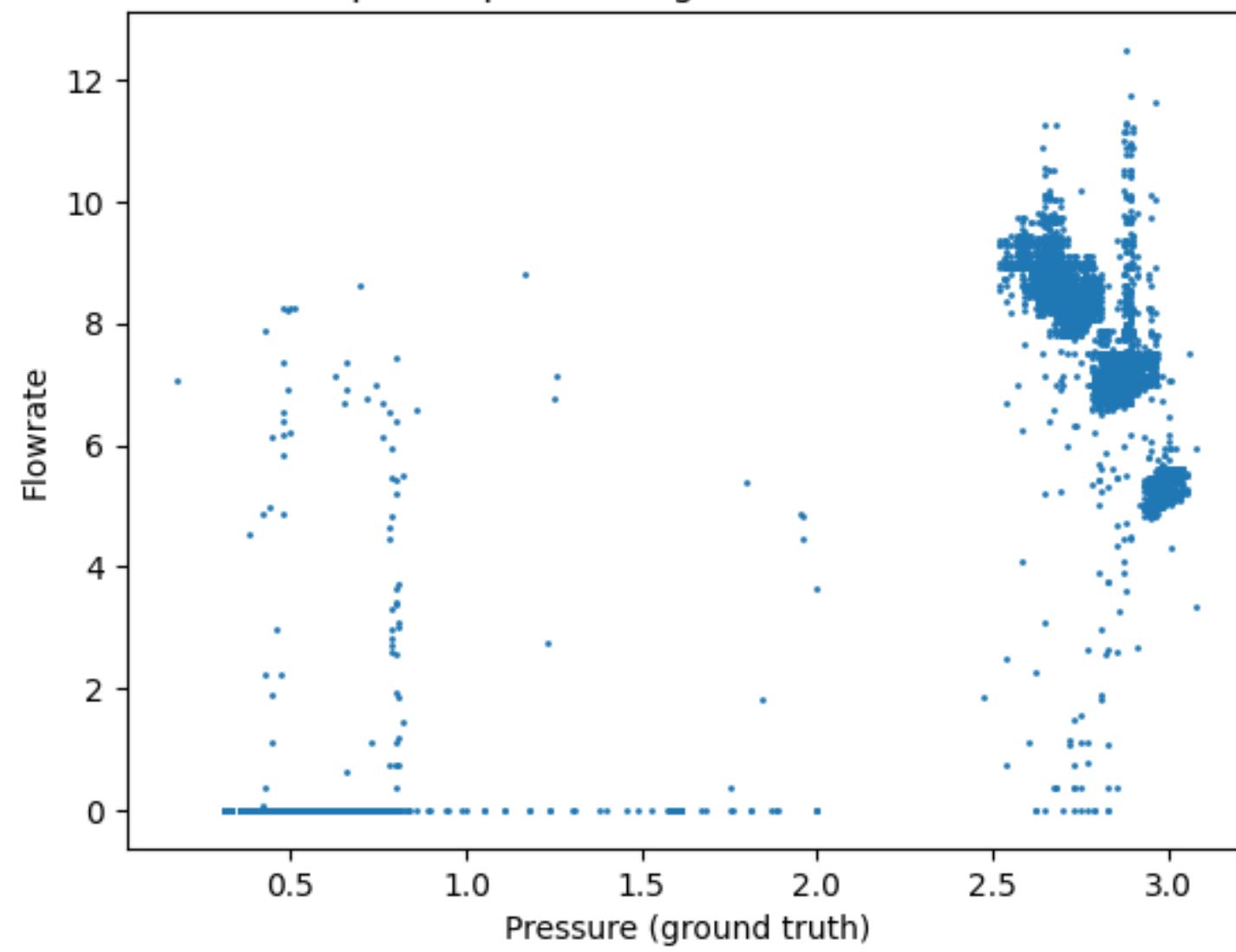
Predicting Flowrate from Pressure



Score: 0.9474091363020369
Error: 0.8203710484248485

PRESSURE (GT) VS FLOWRATE

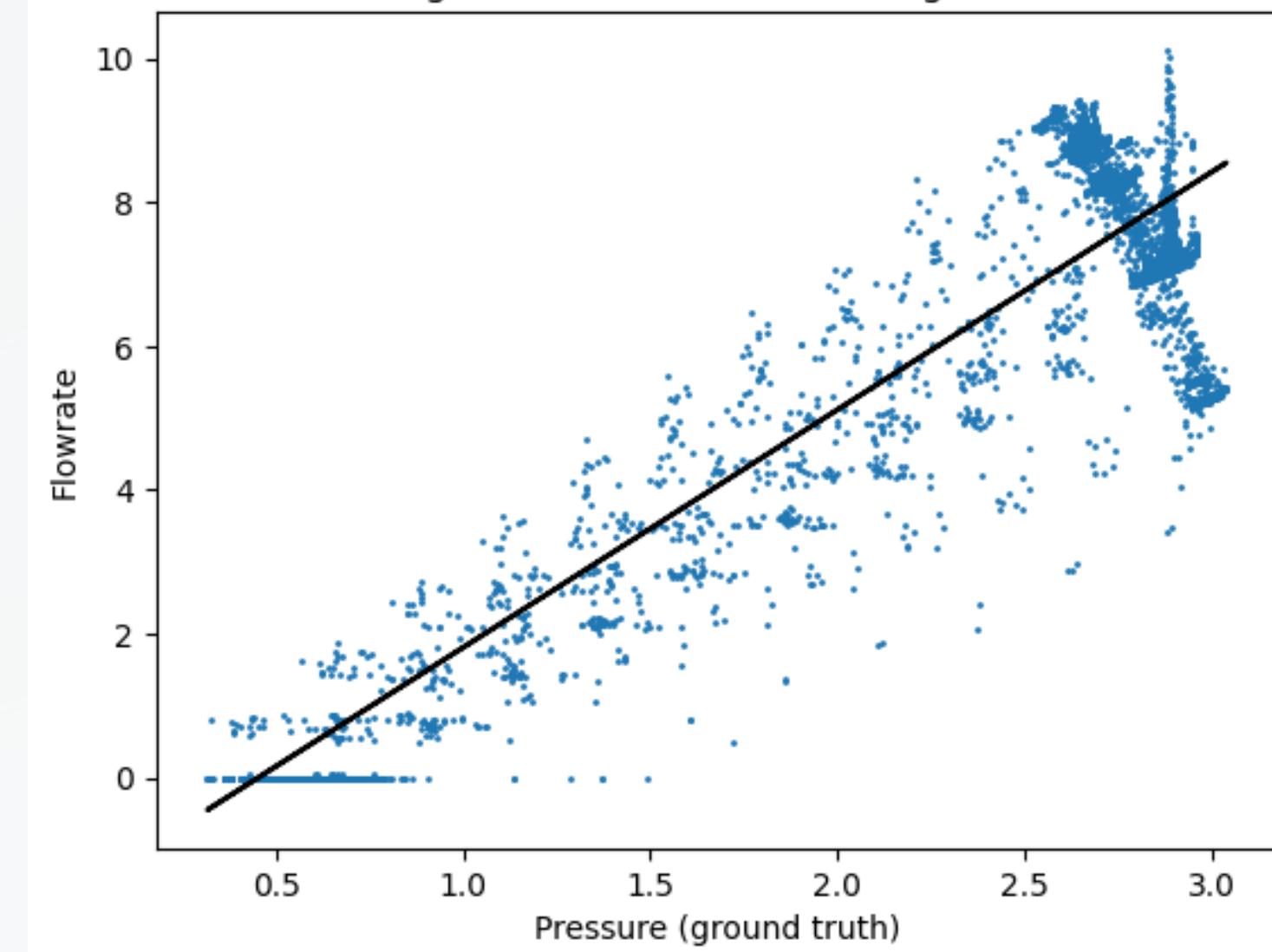
Scatter plot of pressure (ground truth) and flowrate



Score: 0.9370465995290206

Error: 0.9143956893350282

Predicting Flowrate from Pressure (ground truth)



Score: 0.9522858877011308

Error: 0.7845134042736243



PHO302
SMOOTHING
WINDOW = 5

CORRELATION COEFFICIENTS

UNPROCESSED

	Pressure	Flowrate
Pressure	1.000000	0.889101
Flowrate	0.889101	1.000000

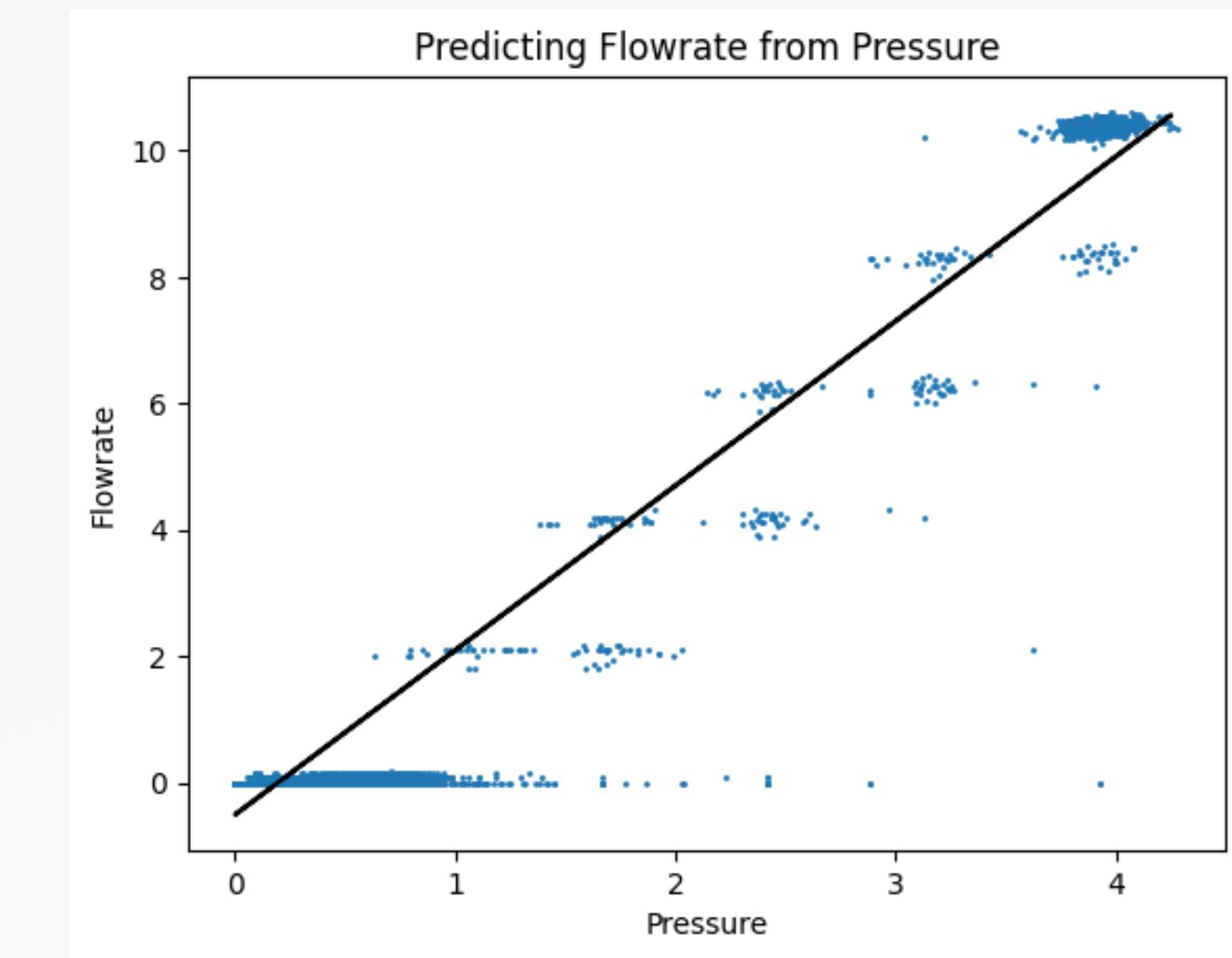
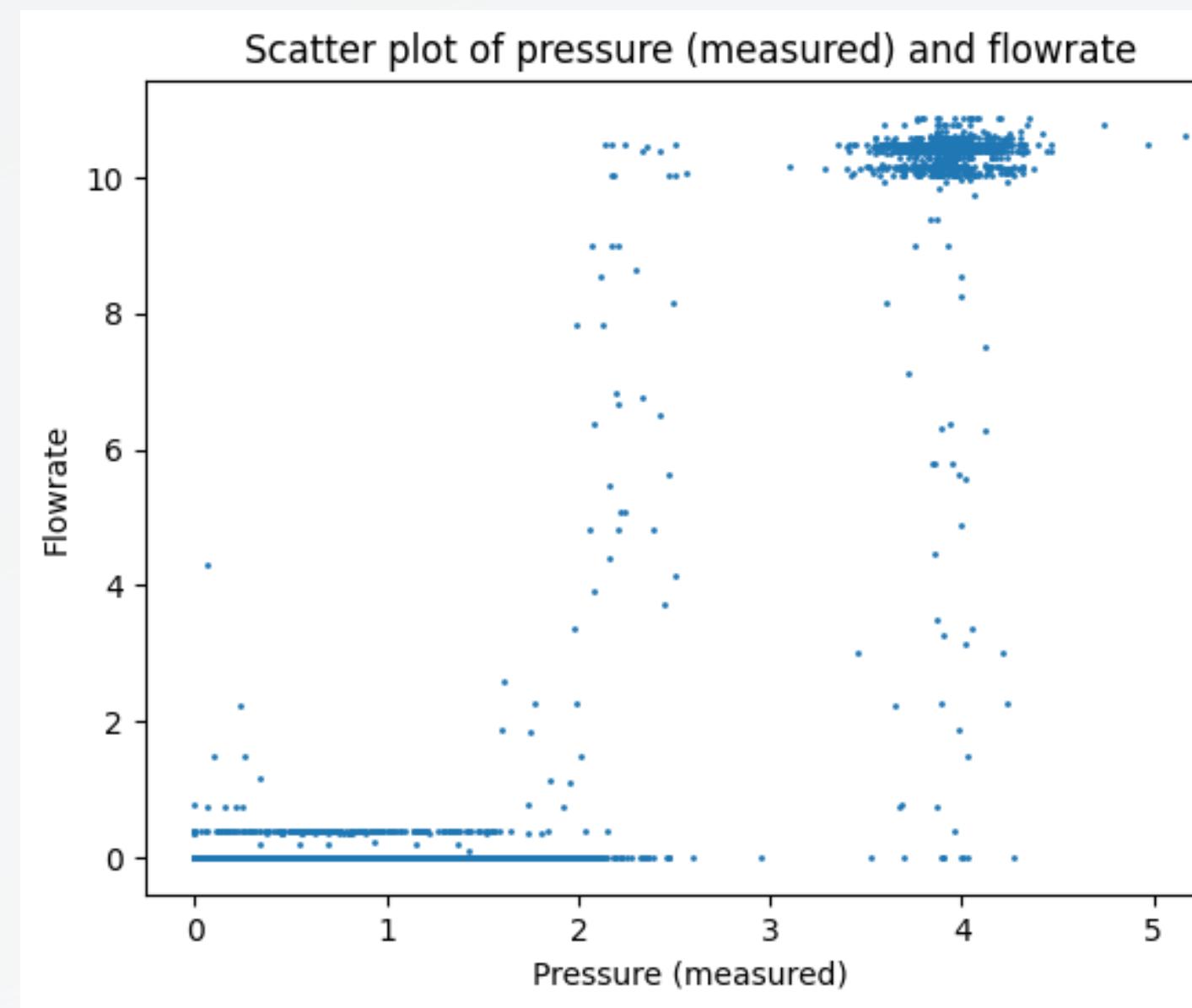
PROCESSED WITH
SMOOTHING OF 5

	Pressure	Flowrate
Pressure	1.000000	0.973204
Flowrate	0.973204	1.000000

PROCESSED WITH
SMOOTHING OF 10

	Pressure	Flowrate
Pressure	1.000000	0.980857
Flowrate	0.980857	1.000000

PRESSURE (MEASURED) VS FLOWRATE



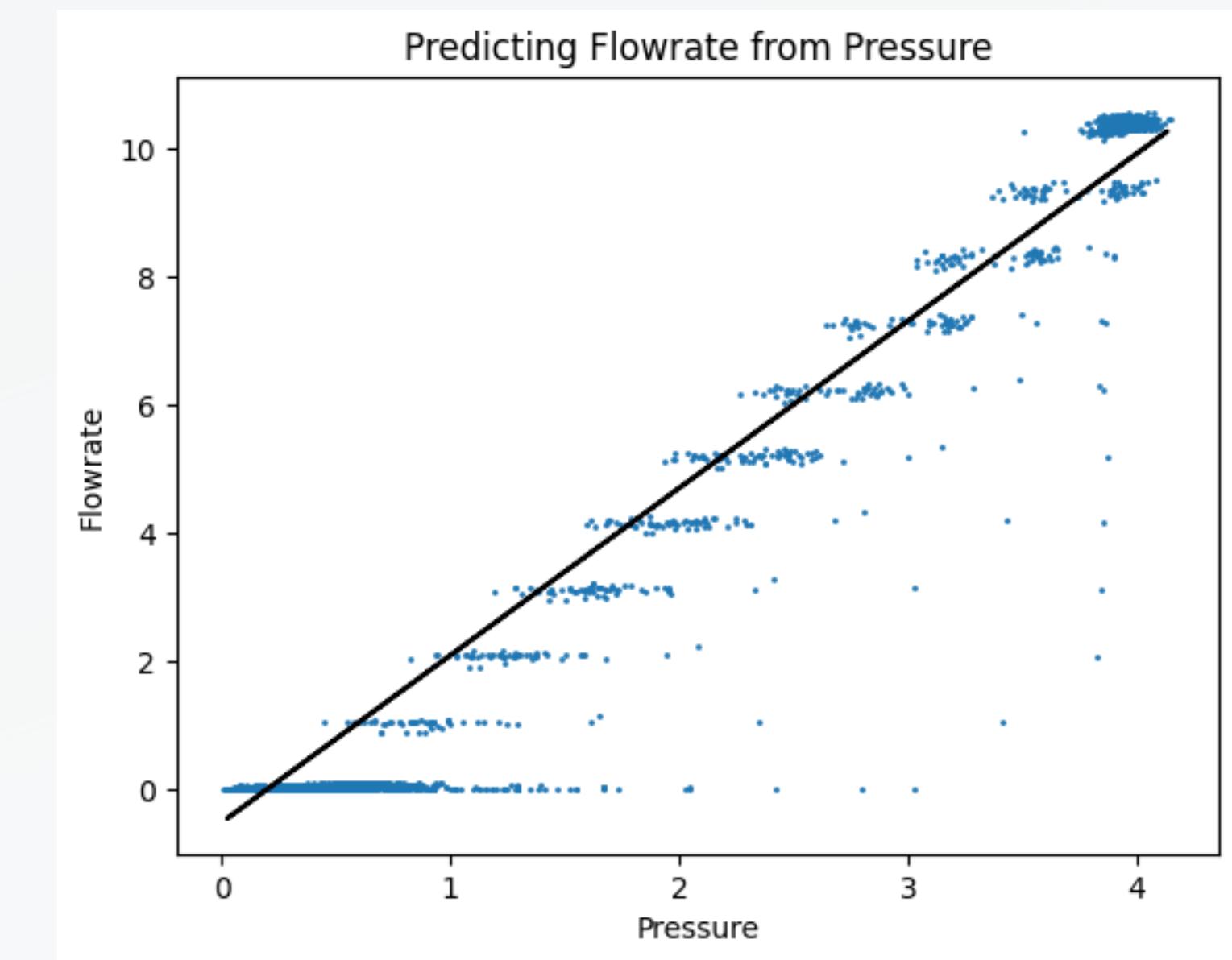
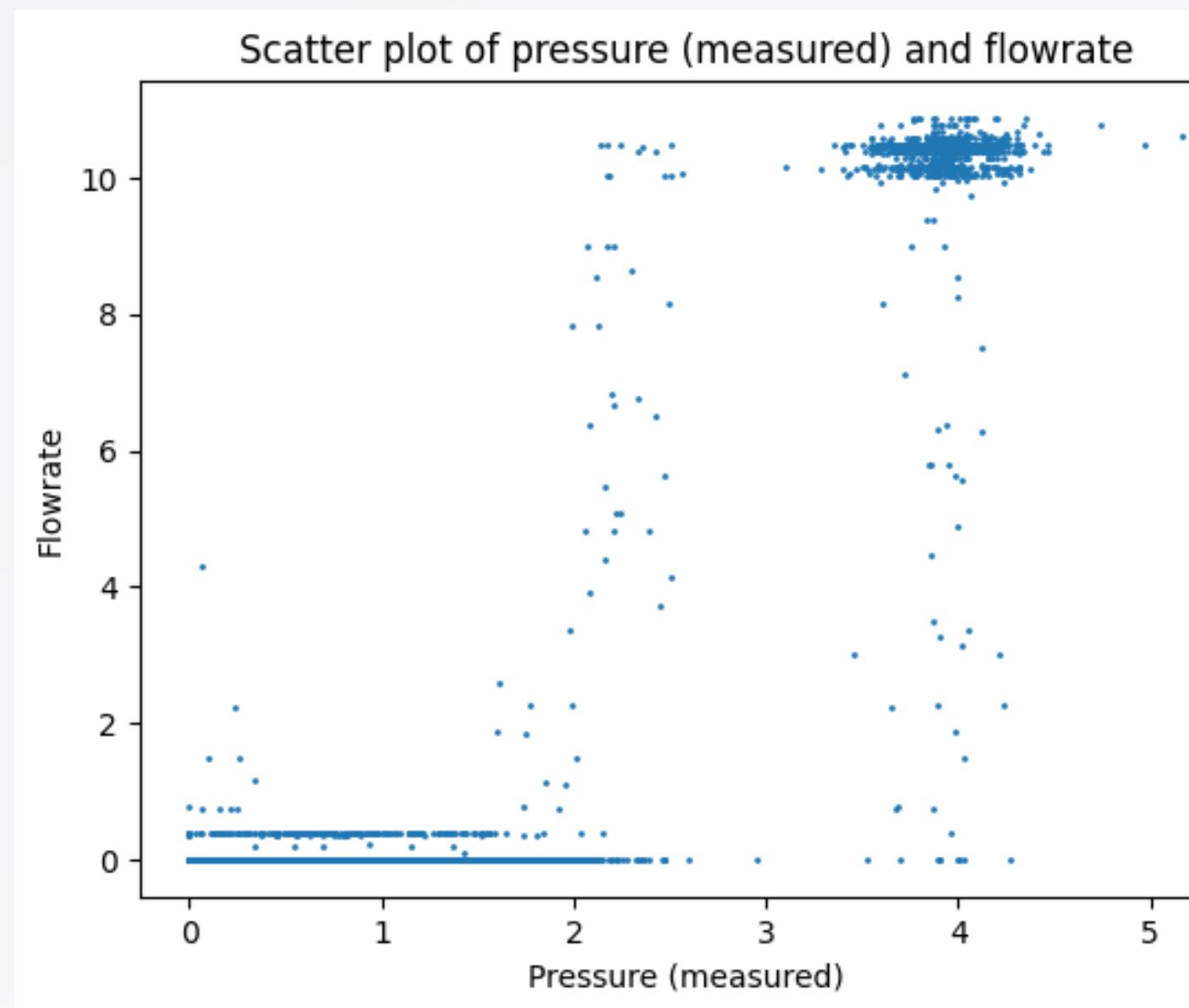
Score: 0.7773779107006826
Error: 0.9611228313701107

Score: 0.9379688890149077
Error: 0.4874122098518337



PH0302
SMOOTHING
WINDOW = 10

PRESSURE (MEASURED) VS FLOWRATE



Score: 0.7773779107006826
Error: 0.9611228313701107

Score: 0.9635614002543593
Error: 0.35013613902138213



PHO303
SMOOTHING
WINDOW = 5

CORRELATION COEFFICIENTS

UNPROCESSED

	Pressure	Flowrate
Pressure	1.000000	0.962017
Flowrate	0.962017	1.000000

PROCESSED WITH
SMOOTHING OF 5

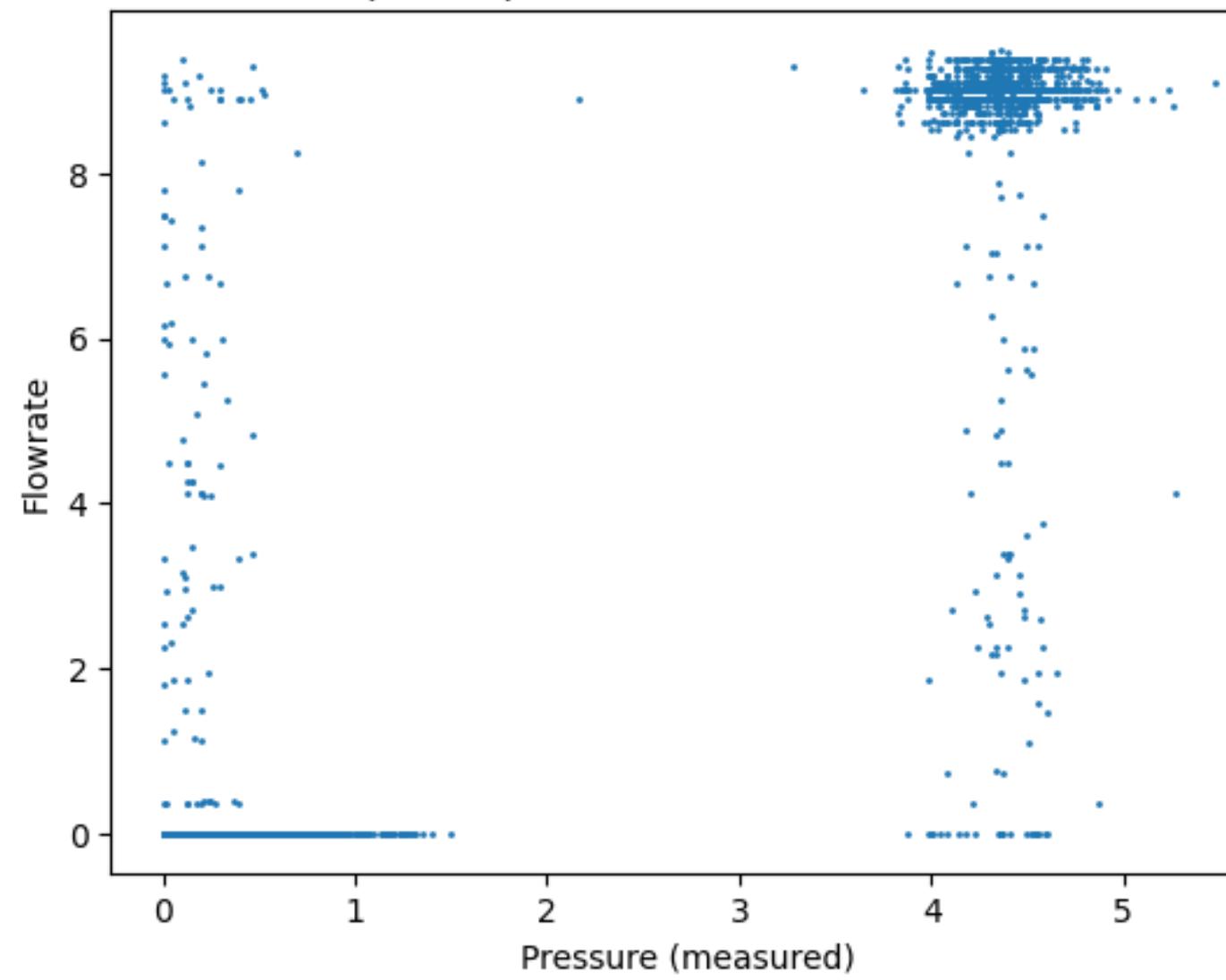
	Pressure	Flowrate
Pressure	1.000000	0.990016
Flowrate	0.990016	1.000000

PROCESSED WITH
SMOOTHING OF 10

	Pressure	Flowrate
Pressure	1.000000	0.994243
Flowrate	0.994243	1.000000

PRESSURE (MEASURED) VS FLOWRATE

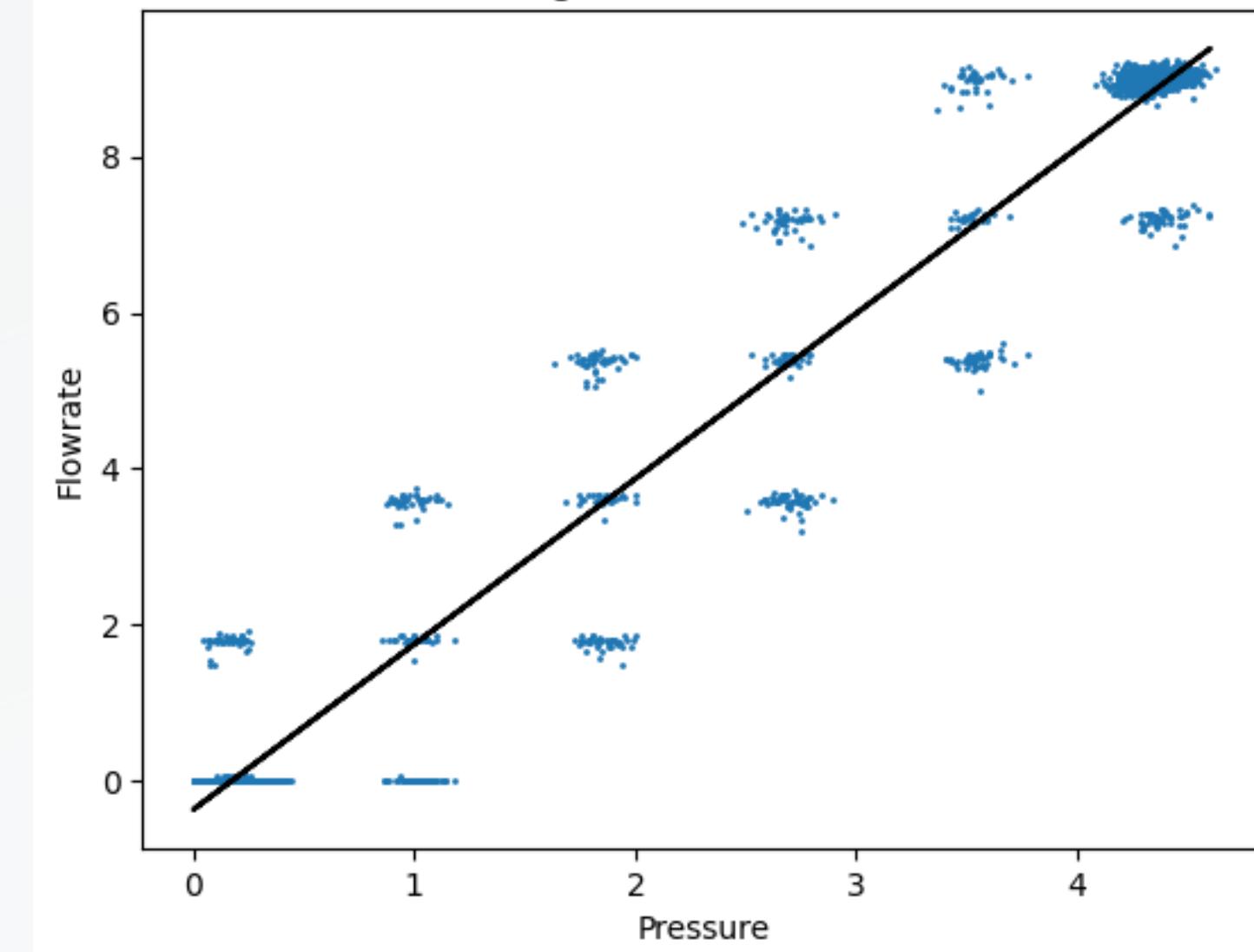
Scatter plot of pressure (measured) and flowrate



Score: 0.9232988704557517

Error: 0.6139073487091775

Predicting Flowrate from Pressure



Score: 0.9798483603480419

Error: 0.29548875991122336



PHO303
SMOOTHING
WINDOW = 10

PRESSURE (MEASURED) VS FLOWRATE

