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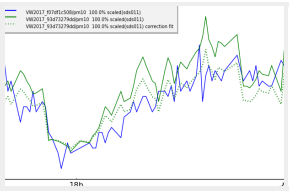
Summary of correlations of sensor kits and sensor modules

Sensorkits: VW2017_f07df1c508 VW2017_93d73279dd
Report generated on: Tue Dec 19 11:12:25 CET 2017

R-square and statistical summary

Measurement PM10 correlation key values

Correlation 1 - **PM10** - kit VW2017_f07df1c508 sensor type **SDS011** with kit VW2017_93d73279dd sensor type **SDS011**:

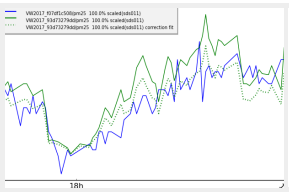


nr samples 71, min= 2.03, max= 4.65
avg= 3.33, std dev= 0.60
R-squared:
0.6304

Best fit polynomial coefficients:
[6.046e-01, 7.324e-01]

Measurement PM2.5 correlation key values

Correlation 2 - **PM2.5** - kit VW2017_f07df1c508 sensor type **SDS011** with kit VW2017_93d73279dd sensor type **SDS011**:

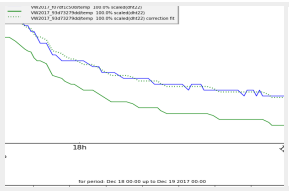


nr samples 71, min= 1.93, max= 4.25
avg= 3.08, std dev= 0.53
R-squared:
0.6991

Best fit polynomial coefficients:
[4.450e-01, 7.717e-01]

Measurement TEMP correlation key values

Correlation 3 - **TEMP** - kit VW2017_f07df1c508 sensor type **DHT22** with kit VW2017_93d73279dd sensor type **DHT22**:



nr samples 70, min=22.80, max=24.30
avg=23.31, std dev= 0.47
R-squared:
0.9885

Best fit polynomial coefficients:
[1.921e+00, 9.366e-01]

Measurement RH correlation key values

Correlation 4 - **RH** - kit VW2017_f07df1c508 sensor type **DHT22** with kit VW2017_93d73279dd sensor type **DHT22**:

nr samples 69, min=29.65, max=31.73
avg=30.57, std dev= 0.44
R-squared:
0.9169

Best fit polynomial coefficients:
[6.601e+00, 7.601e-01]

Sensor sds011@VW2017_f07df1c508 with sensor sds011@VW2017_93d73279dd

correlation report for pm10 (raw) measurements

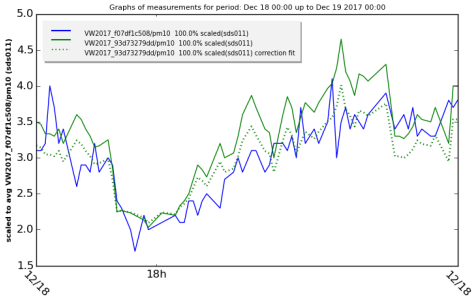
Correlation details of project VW2017 sensor kit ID f07df1c508 with project VW2017 sensor kit ID 93d73279dd
Date of correlation report: Tue Dec 19 11:12:23 CET 2017
From date 2017-12-18 upto 2017-12-19 00:00
Origin of measurement time serie data from InFluxDB host: localhost
Report generated by MyRegression.py (GPL V4) (user teus)

General statistical information for the measurements graphs

Regression best fit calculation details for sensor type(s): sds011
Graphs based on data MYSQL from luchtmetingen on server localhost as user teus:
Database table VW2017_f07df1c508 sensor (column) pm10: 72 db records, deleted 0 NaN records.
Database table VW2017_93d73279dd sensor (column) pm10: 81 db records, deleted 0 NaN records.
Collected 71 values in sample time frame (15m/0s) for the graph. Skipped 1 db records, could not find any value(s) in same sample interval.

Samples period: Dec 18 00:00 up to Dec 19 2017 00:00, interval timing 15m:0s.

Data from table/sheet VW2017_93d73279dd, sensor (column) pm10:



number 71, min= 2.03, max= 4.65

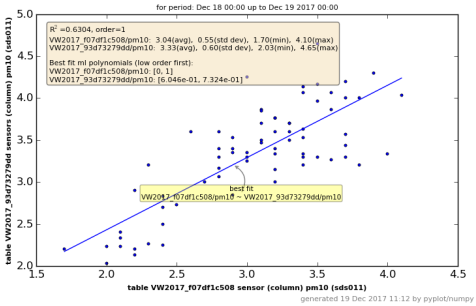
avg= 3.33, std dev= 0.60

R-squared (R²) with VW2017_93d73279dd/pm10: 0.6304

Best fit linear single polynomial regression curve (A_0*X^0 + A_1*X^1):

VW2017_f07df1c508/pm10 (sds011)-> best fit coefficients:

6.046e-01, 7.324e-01



Statistical summary linear regression for VW2017_f07df1c508/pm10 with ['VW2017_93d73279dd/pm10']:

OLS Regression Results

Dep. Variable:	VW2017_f07df1c508/pm10	**R-squared:**	0.630
Model:	OLS	**Adj. R-squared:**	0.625
Method:	Least Squares	**F-statistic:**	117.7
Date:	Tue, 19 Dec 2017	**Prob (F-statistic):**	1.45e-16
Time:	11:12:24	**Log-Likelihood:**	-23.347
No. Observations:	71	**AIC:**	50.69
Df Residuals:	69	**BIC:**	55.22
Df Model:	1		

	coef	std err	t	P>|t|	[95.0% Conf. Int.]	
VW2017_93d73279dd/pm10	0.6046	0.228	2.649	0.010	0.149	1.060

Omnibus:	3.832	**Durbin-Watson:**	1.317
Prob(Omnibus):	0.147	**Jarque-Bera (JB):**	3.015
Skew:	0.468	**Prob(JB):**	0.221
Kurtosis:	3.377	**Cond. No.**	20.7

Sensor sds011@VW2017_f07df1c508 with sensor sds011@VW2017_93d73279dd

correlation report for pm25 (raw) measurements

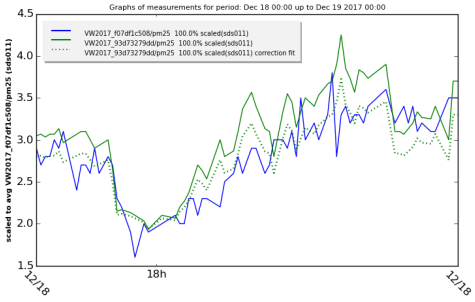
Correlation details of project VW2017 sensor kit ID f07df1c508 with project VW2017 sensor kit ID 93d73279dd
Date of correlation report: Tue Dec 19 11:12:25 CET 2017
From date 2017-12-18 upto 2017-12-19 00:00
Origin of measurement time serie data from InFluxDB host: localhost
Report generated by MyRegression.py (GPL V4) (user teus)

General statistical information for the measurements graphs

Regression best fit calculation details for sensor type(s): sds011
Graphs based on data MYSQL from luchtmetingen on server localhost as user teus:
Database table VW2017_f07df1c508 sensor (column) pm25: 72 db records, deleted 0 NaN records.
Database table VW2017_93d73279dd sensor (column) pm25: 81 db records, deleted 0 NaN records.
Collected 71 values in sample time frame (15m/0s) for the graph. Skipped 1 db records, could not find any value(s) in same sample interval.

Samples period: Dec 18 00:00 up to Dec 19 2017 00:00, interval timing 15m:0s.

Data from table/sheet VW2017_93d73279dd, sensor (column) pm25:



number 71, min= 1.93, max= 4.25

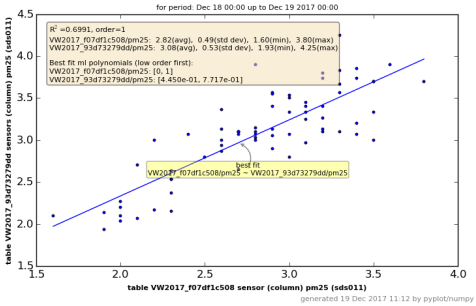
avg= 3.08, std dev= 0.53

R-squared (R^2) with VW2017_93d73279dd/pm25: 0.6991

Best fit linear single polynomial regression curve ($A_0*X^0 + A_1*X^1$):

VW2017_f07df1c508/pm25 (sds011)-> best fit coefficients:

4.450e-01, 7.717e-01



Statistical summary linear regression for VW2017_f07df1c508/pm25 with ['VW2017_93d73279dd/pm25']:

OLS Regression Results

Dep. Variable:	VW2017_f07df1c508/pm25	**R-squared:**	0.699
Model:	OLS	**Adj. R-squared:**	0.695
Method:	Least Squares	**F-statistic:**	160.3
Date:	Tue, 19 Dec 2017	**Prob (F-statistic):**	1.15e-19
Time:	11:12:26	**Log-Likelihood:**	-7.3593
No. Observations:	71	**AIC:**	18.72
Df Residuals:	69	**BIC:**	23.24
Df Model:	1		

	coef	std err	t	P>|t|	[95.0% Conf. Int.]	
VW2017_93d73279dd/pm25	0.4450	0.190	2.337	0.022	0.065	0.825

Omnibus:	1.575	**Durbin-Watson:**	1.401
Prob(Omnibus):	0.455	**Jarque-Bera (JB):**	0.958
Skew:	0.241	**Prob(JB):**	0.620
Kurtosis:	3.301	**Cond. No.**	20.3

Sensor dht22@VW2017_f07df1c508 with sensor dht22@VW2017_93d73279dd

correlation report for temp (raw) measurements

Correlation details of project VW2017 sensor kit ID f07df1c508 with project VW2017 sensor kit ID 93d73279dd
Date of correlation report: Tue Dec 19 11:12:27 CET 2017
From date 2017-12-18 upto 2017-12-19 00:00
Origin of measurement time serie data from InFluxDB host: localhost
Report generated by MyRegression.py (GPL V4) (user teus)

General statistical information for the measurements graphs

Regression best fit calculation details for sensor type(s): dht22
Graphs based on data MYSQL from luchtmetingen on server localhost as user teus:
Database table VW2017_f07df1c508 sensor (column) temp: 71 db records, deleted 1 NaN records.
Database table VW2017_93d73279dd sensor (column) temp: 80 db records, deleted 1 NaN records.
Collected 70 values in sample time frame (15m/0s) for the graph. Skipped 1 db records, could not find any value(s) in same sample interval.

Samples period: Dec 18 00:00 up to Dec 19 2017 00:00, interval timing 15m:0s.

Data from table/sheet VW2017_93d73279dd, sensor (column) temp:

number 70, min=22.80, max=24.30

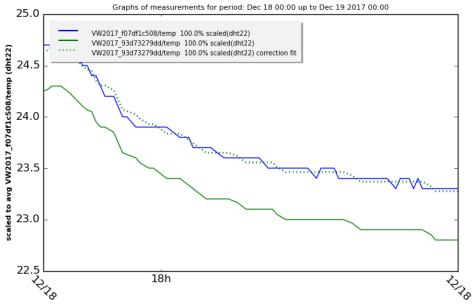
avg=23.31, std dev= 0.47

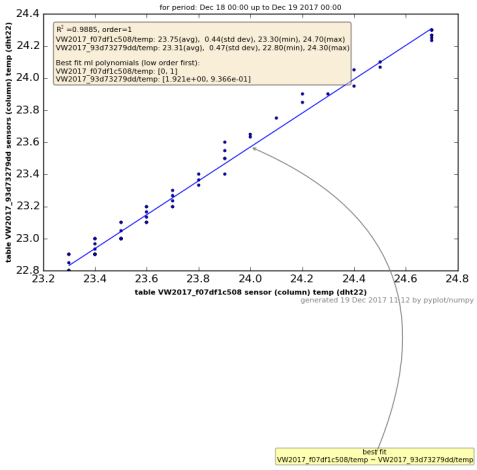
R-squared (R²) with VW2017_93d73279dd/temp: 0.9885

Best fit linear single polynomial regression curve (A_0*X^0 + A_1*X^1):

VW2017_f07df1c508/temp (dht22)-> best fit coefficients:

1.921e+00, 9.366e-01





Statistical summary linear regression for VW2017_f07df1c508/temp with ['VW2017_93d73279dd/temp']:

OLS Regression Results

Dep. Variable:	VW2017_f07df1c508/temp	**R-squared:**	0.988
Model:	OLS	**Adj. R-squared:**	0.988
Method:	Least Squares	**F-statistic:**	5839.
Date:	Tue, 19 Dec 2017	**Prob (F-statistic):**	1.16e-67
Time:	11:12:28	**Log-Likelihood:**	114.55
No. Observations:	70	**AIC:**	-225.1
Df Residuals:	68	**BIC:**	-220.6
Df Model:	1		

	coef	**std err**	**t**	**P>|t|**	**[95.0% Conf. Int.]**	
VW2017_93d73279dd/temp	1.9206	0.286	6.721	0.000	1.350	2.491

Omnibus:	7.098	**Durbin-Watson:**	1.243
Prob(Omnibus):	0.029	**Jarque-Bera (JB):**	5.619
Skew:	-0.582	**Prob(JB):**	0.0602
Kurtosis:	2.245	**Cond. No.**	1.17e+03

Sensor dht22@VW2017_f07df1c508 with sensor dht22@VW2017_93d73279dd

correlation report for rh (raw) measurements

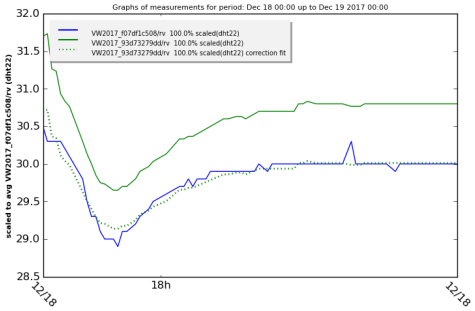
Correlation details of project VW2017 sensor kit ID f07df1c508 with project VW2017 sensor kit ID 93d73279dd
Date of correlation report: Tue Dec 19 11:12:29 CET 2017
From date 2017-12-18 upto 2017-12-19 00:00
Origin of measurement time serie data from InFluxDB host: localhost
Report generated by MyRegression.py (GPL V4) (user teus)

General statistical information for the measurements graphs

Regression best fit calculation details for sensor type(s): dht22
Graphs based on data MYSQL from luchtmetingen on server localhost as user teus:
Database table VW2017_f07df1c508 sensor (column) rv: 70 db records, deleted 2 NaN records.
Database table VW2017_93d73279dd sensor (column) rv: 79 db records, deleted 2 NaN records.
Collected 69 values in sample time frame (15m/0s) for the graph. Skipped 1 db records, could not find any value(s) in same sample interval.

Samples period: Dec 18 00:00 up to Dec 19 2017 00:00, interval timing 15m:0s.

Data from table/sheet VW2017_93d73279dd, sensor (column) rv:



number 69, min=29.65, max=31.73

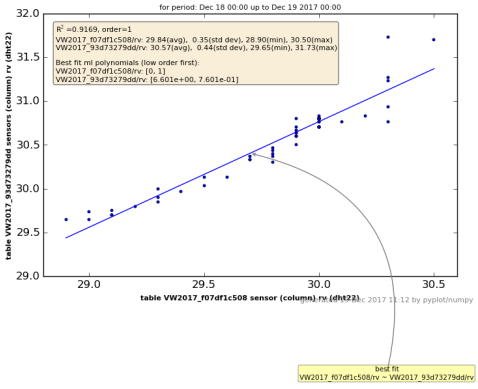
avg=30.57, std dev= 0.44

R-squared (R²) with VW2017_93d73279dd/rv: 0.9169

Best fit linear single polynomial regression curve (A_0*X^0 + A_1*X^1):

VW2017_f07df1c508/rv (dht22)-> best fit coefficients:

6.601e+00, 7.601e-01



Statistical summary linear regression for VW2017_f07df1c508/rv with ['VW2017_93d73279dd/rv']:

OLS Regression Results

Dep. Variable:	VW2017_f07df1c508/rv	**R-squared:**	0.917
Model:	OLS	**Adj. R-squared:**	0.916
Method:	Least Squares	**F-statistic:**	739.3
Date:	Tue, 19 Dec 2017	**Prob (F-statistic):**	6.48e-38
Time:	11:12:30	**Log-Likelihood:**	61.144
No. Observations:	69	**AIC:**	-118.3
Df Residuals:	67	**BIC:**	-113.8
Df Model:	1		

	coef	**std err**	**t**	**P>|t|**	**[95.0% Conf. Int.]**	
VW2017_93d73279dd/rv	6.6009	0.855	7.723	0.000	4.895	8.307

Omnibus:	22.318	**Durbin-Watson:**	0.943
Prob(Omnibus):	0.000	**Jarque-Bera (JB):**	69.682
Skew:	-0.845	**Prob(JB):**	7.39e-16
Kurtosis:	7.624	**Cond. No.**	2.15e+03