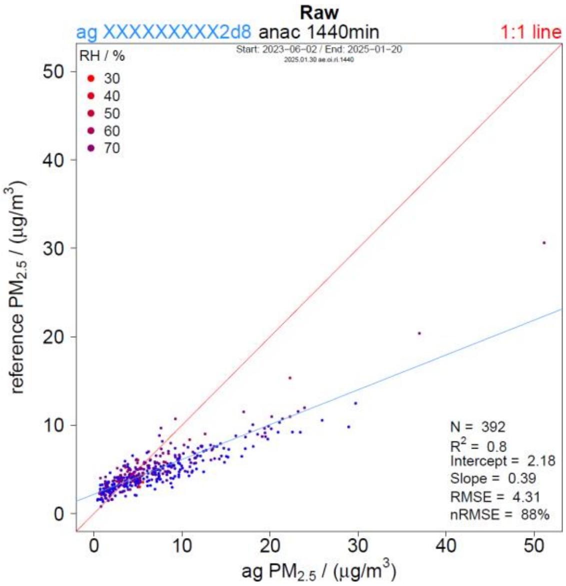
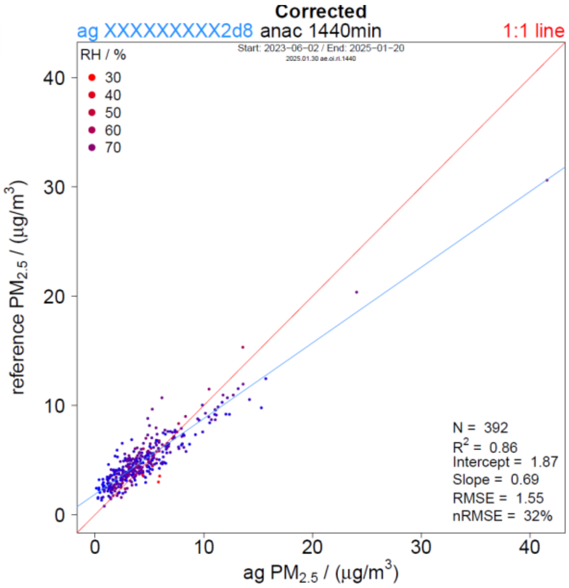
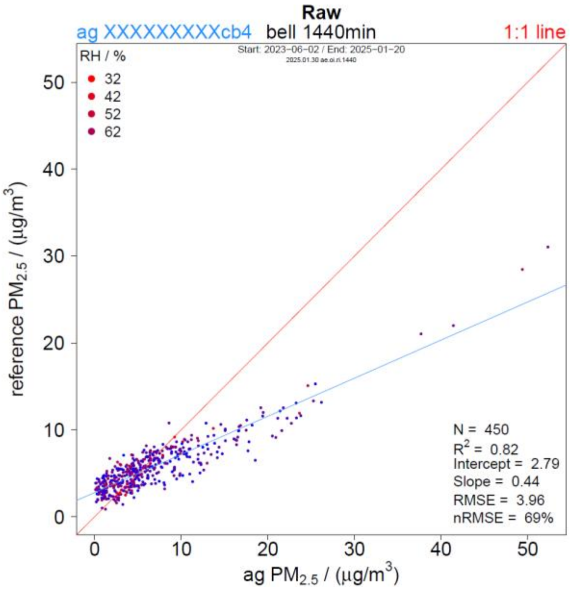
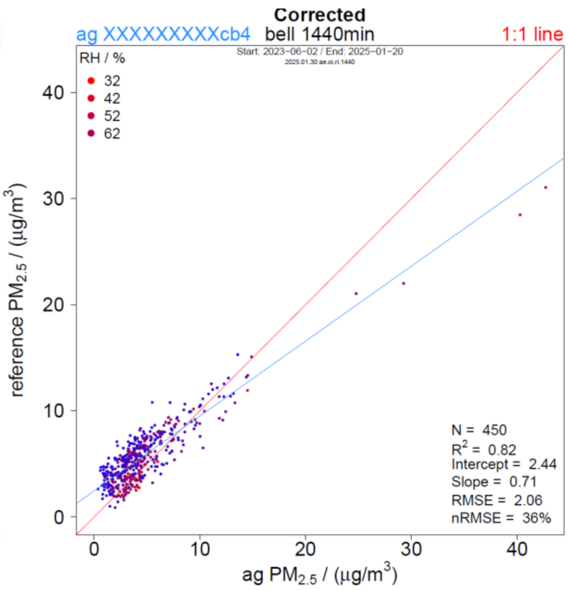
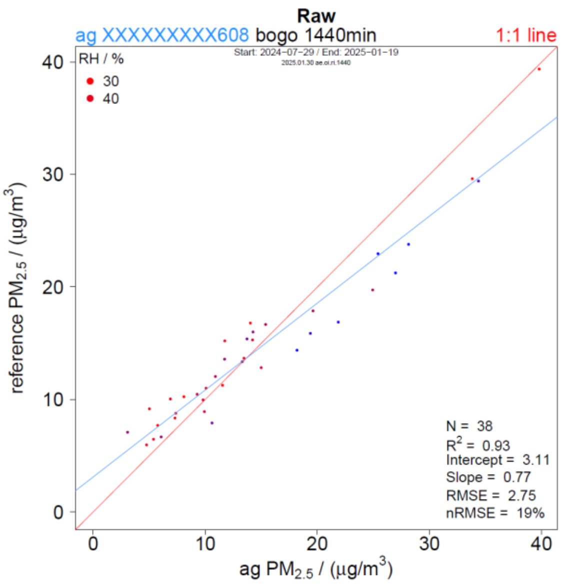
Appendix for AirGradient's blog post 'Update: AirGradient and the PM2.5 correction algorithm from the EPA'

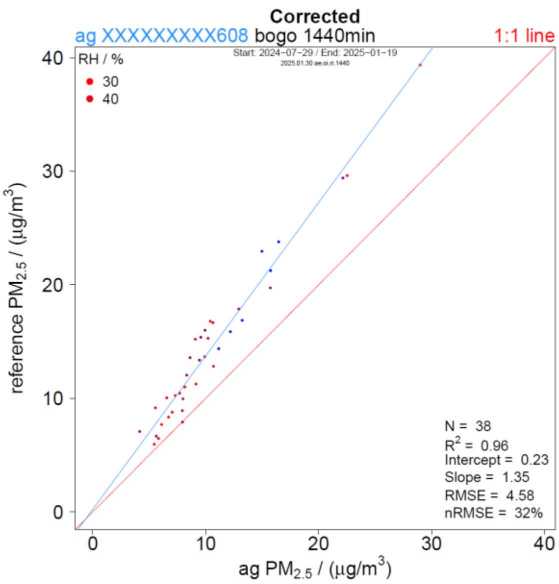


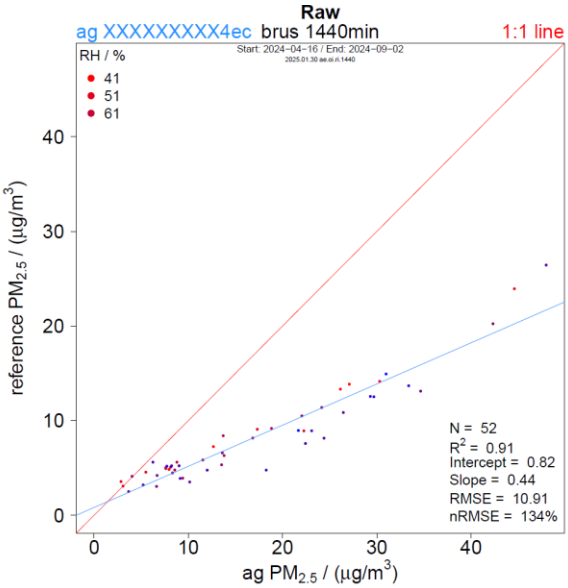


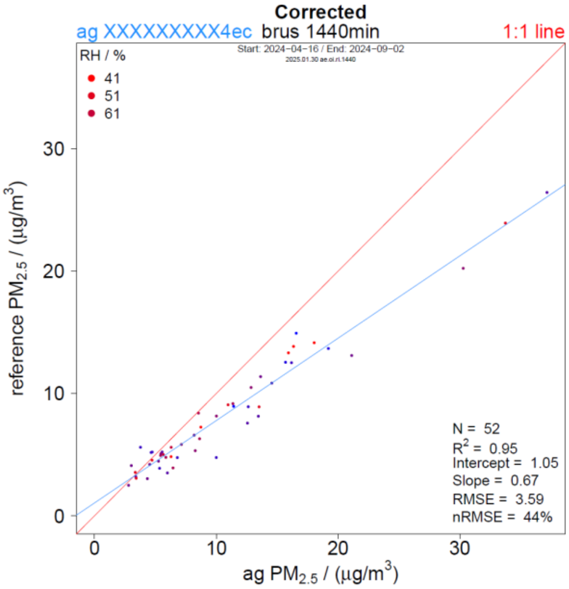


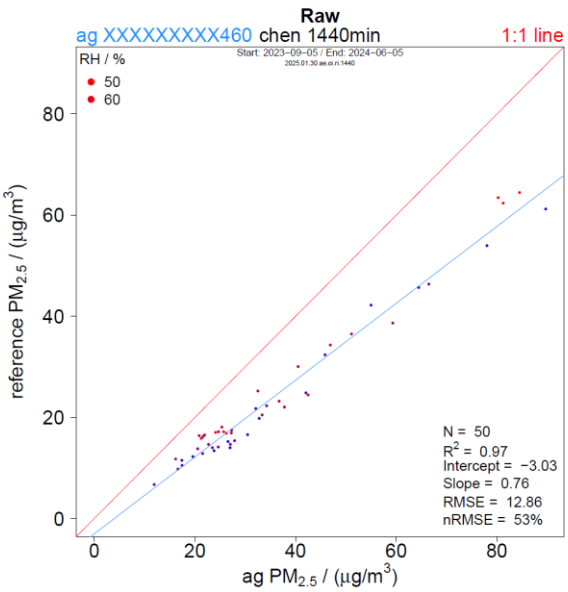


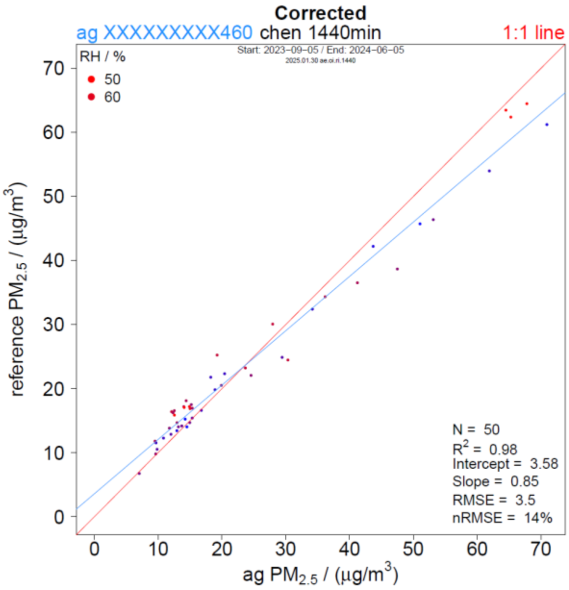


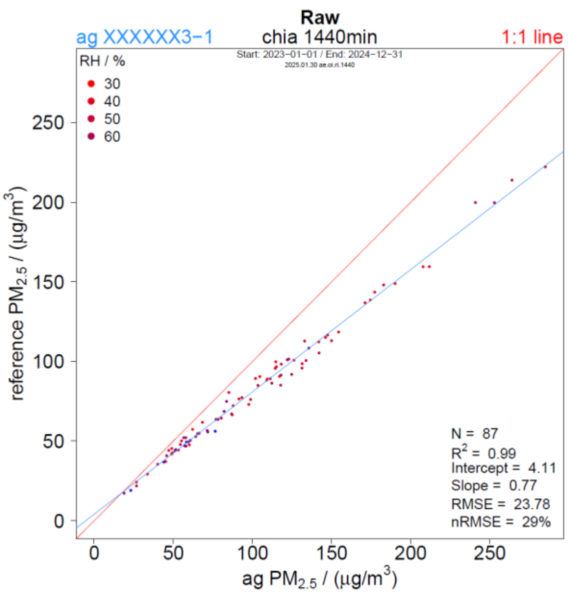


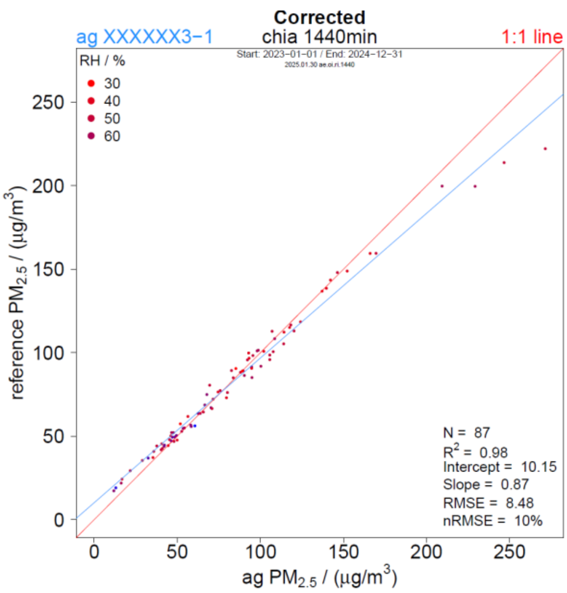

Raw
ag XXXXXXXXX4ec brus 1440min
1:1 line
Start: 2024-04-16 / End: 2024-09-02
RH / %
41
51
61
N = 52
R^2 = 0.91
Intercept = 0.82
Slope = 0.44
RMSE = 10.91
nRMSE = 134%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)

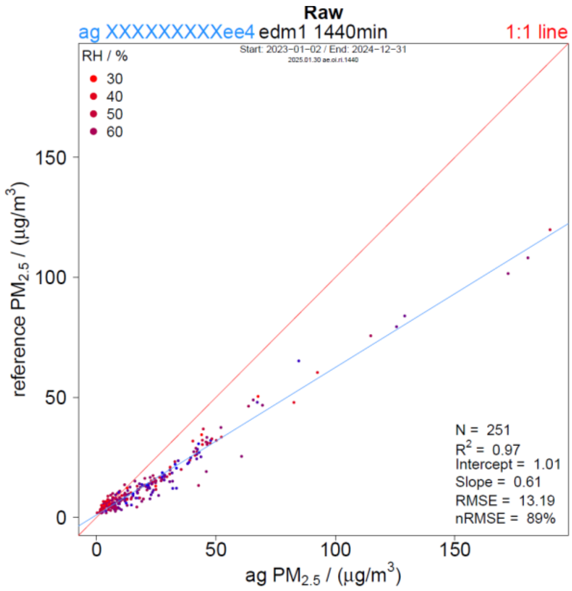

Corrected
ag XXXXXXXXX4ec brus 1440min
1:1 line
Start: 2024-04-16 / End: 2024-09-02
RH / %
41
51
61
N = 52
R^2 = 0.95
Intercept = 1.05
Slope = 0.67
RMSE = 3.59
nRMSE = 44%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)

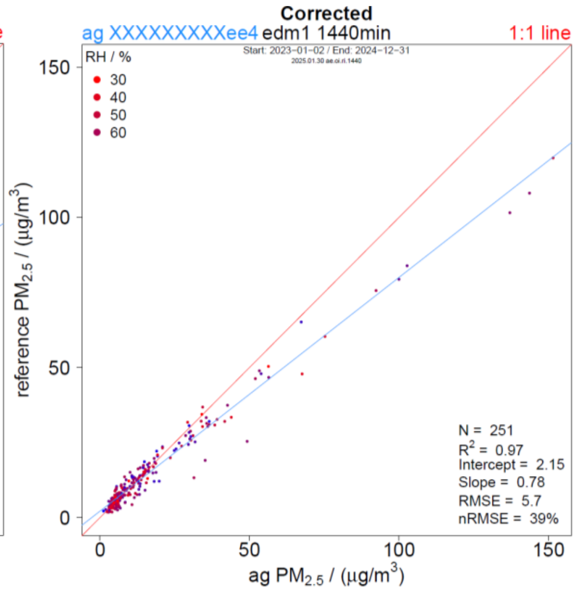

Raw
ag XXXXXXXXX460 chen 1440min
1:1 line
Start: 2023-09-05 / End: 2024-06-05
RH / %
50
60
N = 50
R^2 = 0.97
Intercept = −3.03
Slope = 0.76
RMSE = 12.86
nRMSE = 53%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)

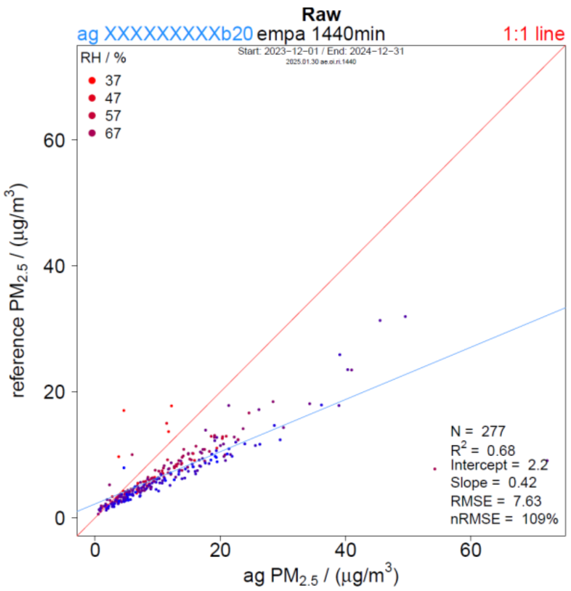

Corrected
ag XXXXXXXXX460 chen 1440min
1:1 line
Start: 2023-09-05 / End: 2024-06-05
RH / %
50
60
N = 50
R^2 = 0.98
Intercept = 3.58
Slope = 0.85
RMSE = 3.5
nRMSE = 14%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)

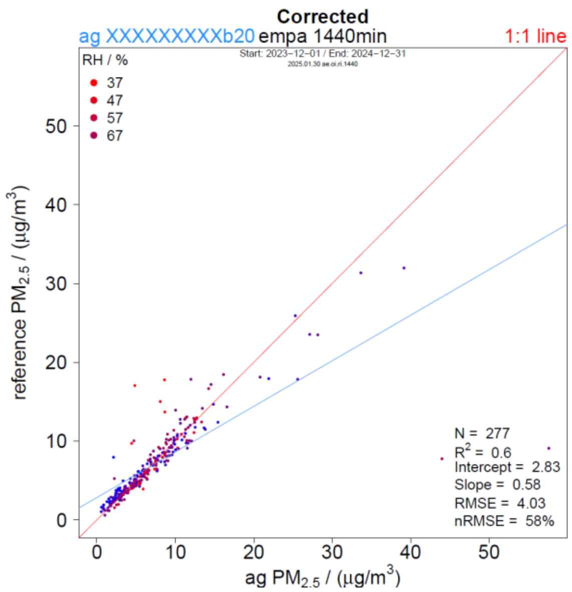

Raw
ag XXXXXX3−1 chia 1440min
1:1 line
Start: 2023-01-01 / End: 2024-12-31
RH / %
30
40
50
60
N = 87
R^2 = 0.99
Intercept = 4.11
Slope = 0.77
RMSE = 23.78
nRMSE = 29%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)

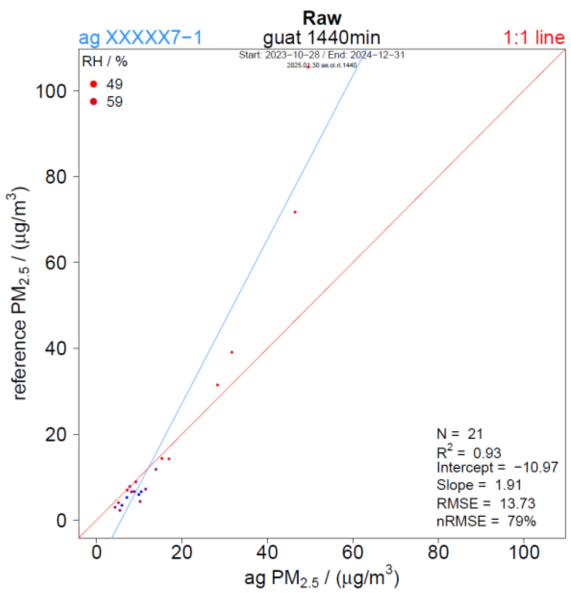

Corrected
ag XXXXXX3−1 chia 1440min
1:1 line
Start: 2023-01-01 / End: 2024-12-31
RH / %
30
40
50
60
N = 87
R^2 = 0.98
Intercept = 10.15
Slope = 0.87
RMSE = 8.48
nRMSE = 10%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)

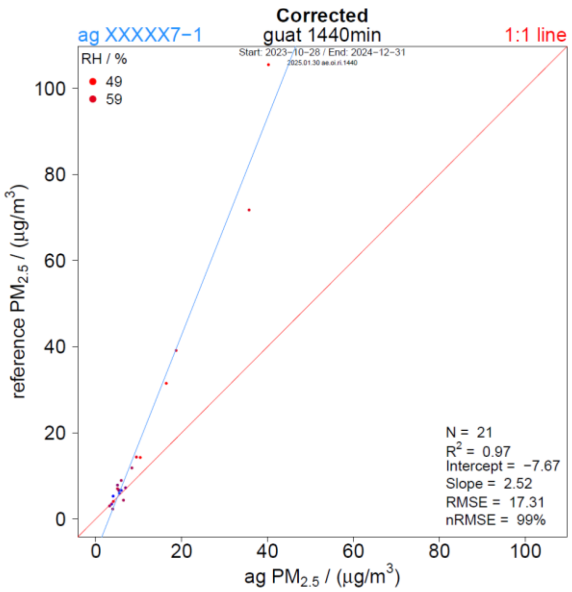

Raw
ag XXXXXXXXXee4 edm1 1440min
1:1 line
RH / %
30
40
50
60
Start: 2023-01-02 / End: 2024-12-31
N = 251
R^2 = 0.97
Intercept = 1.01
Slope = 0.61
RMSE = 13.19
nRMSE = 89%
reference $PM_{2.5}$ / ($\mu g/m^3$)
ag $PM_{2.5}$ / ($\mu g/m^3$)

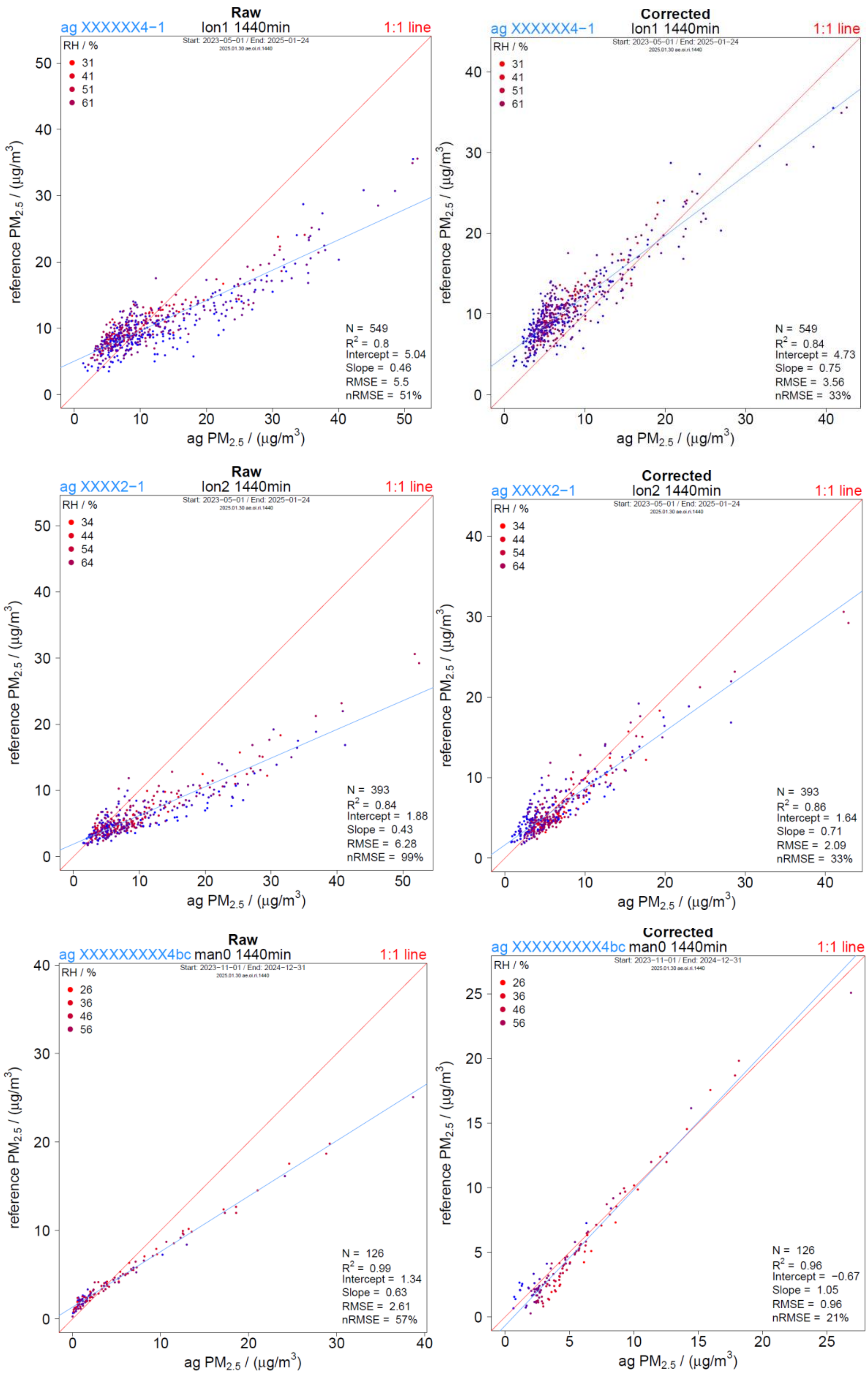

Corrected
ag XXXXXXXXXee4 edm1 1440min
1:1 line
RH / %
30
40
50
60
Start: 2023-01-02 / End: 2024-12-31
N = 251
R^2 = 0.97
Intercept = 2.15
Slope = 0.78
RMSE = 5.7
nRMSE = 39%
reference $PM_{2.5}$ / ($\mu g/m^3$)
ag $PM_{2.5}$ / ($\mu g/m^3$)


Raw
ag XXXXXXXXXb20 empa 1440min
1:1 line
RH / %
37
47
57
67
Start: 2023-12-01 / End: 2024-12-31
N = 277
R^2 = 0.68
Intercept = 2.2
Slope = 0.42
RMSE = 7.63
nRMSE = 109%
reference $PM_{2.5}$ / ($\mu g/m^3$)
ag $PM_{2.5}$ / ($\mu g/m^3$)

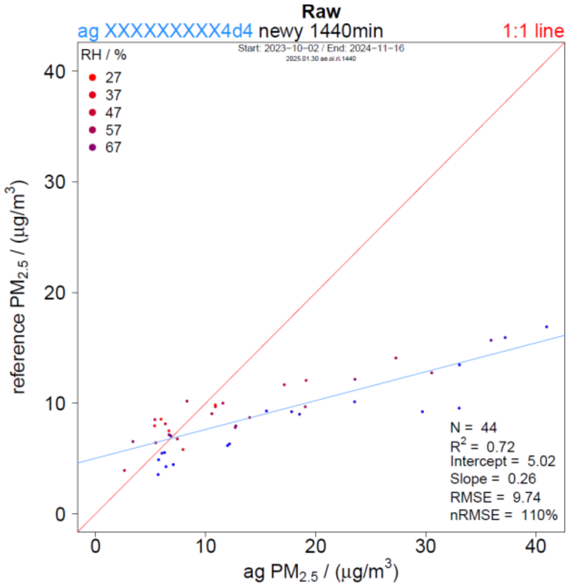

Corrected
ag XXXXXXXXXb20 empa 1440min
1:1 line
RH / %
37
47
57
67
Start: 2023-12-01 / End: 2024-12-31
N = 277
R^2 = 0.6
Intercept = 2.83
Slope = 0.58
RMSE = 4.03
nRMSE = 58%
reference $PM_{2.5}$ / ($\mu g/m^3$)
ag $PM_{2.5}$ / ($\mu g/m^3$)

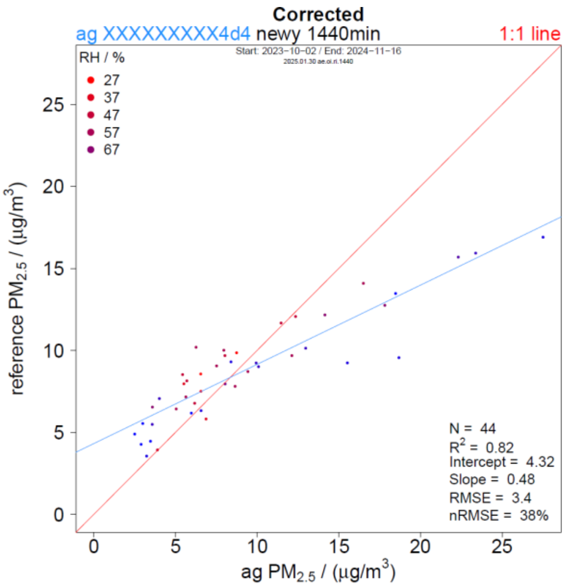

Raw
ag XXXXX7-1 guat 1440min
1:1 line
RH / %
49
59
Start: 2023-10-28 / End: 2024-12-31
N = 21
R^2 = 0.93
Intercept = −10.97
Slope = 1.91
RMSE = 13.73
nRMSE = 79%
reference $PM_{2.5}$ / ($\mu g/m^3$)
ag $PM_{2.5}$ / ($\mu g/m^3$)

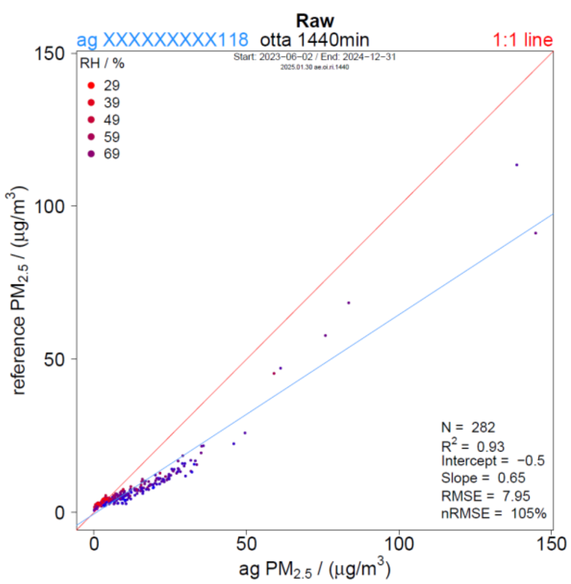

Corrected
ag XXXXX7-1 guat 1440min
1:1 line
RH / %
49
59
Start: 2023-10-28 / End: 2024-12-31
N = 21
R^2 = 0.97
Intercept = −7.67
Slope = 2.52
RMSE = 17.31
nRMSE = 99%
reference $PM_{2.5}$ / ($\mu g/m^3$)
ag $PM_{2.5}$ / ($\mu g/m^3$)

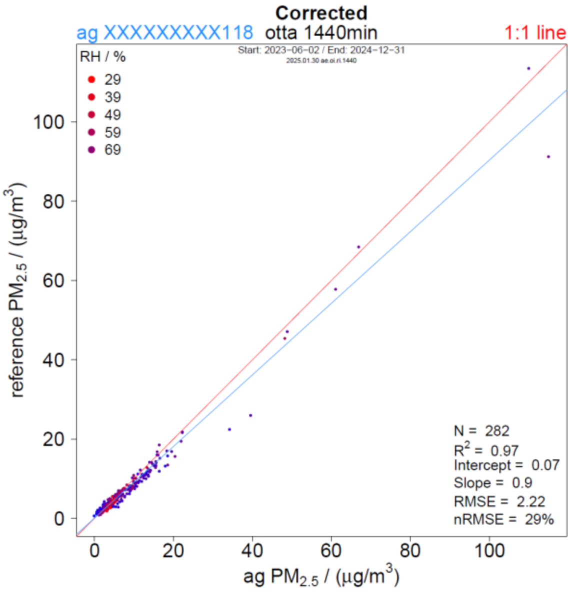


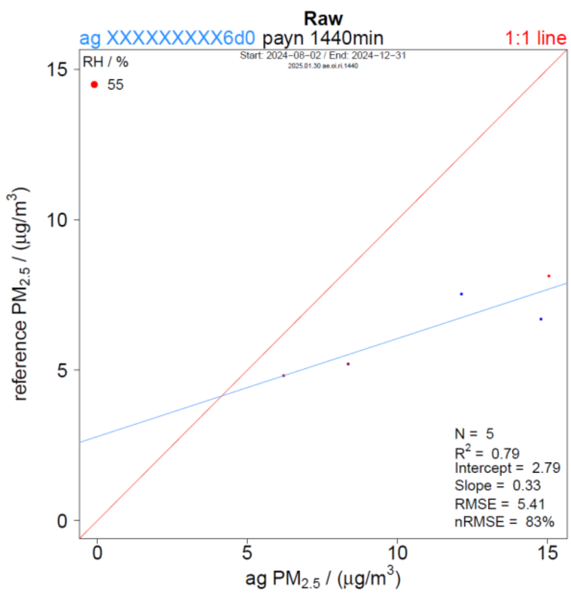
Raw
ag XXXXXX4-1 lon1 1440min
1:1 line
Start: 2023-05-01 / End: 2025-01-24
RH / %
31
41
51
61
N = 549
R² = 0.8
Intercept = 5.04
Slope = 0.46
RMSE = 5.5
nRMSE = 51%
reference PM2.5 / (µg/m³)
ag PM2.5 / (µg/m³)
Corrected
ag XXXXXX4-1 lon1 1440min
1:1 line
Start: 2023-05-01 / End: 2025-01-24
RH / %
31
41
51
61
N = 549
R² = 0.84
Intercept = 4.73
Slope = 0.75
RMSE = 3.56
nRMSE = 33%
reference PM2.5 / (µg/m³)
ag PM2.5 / (µg/m³)
Raw
ag XXXX2-1 lon2 1440min
1:1 line
Start: 2023-05-01 / End: 2025-01-24
RH / %
34
44
54
64
N = 393
R² = 0.84
Intercept = 1.88
Slope = 0.43
RMSE = 6.28
nRMSE = 99%
reference PM2.5 / (µg/m³)
ag PM2.5 / (µg/m³)
Corrected
ag XXXX2-1 lon2 1440min
1:1 line
Start: 2023-05-01 / End: 2025-01-24
RH / %
34
44
54
64
N = 393
R² = 0.86
Intercept = 1.64
Slope = 0.71
RMSE = 2.09
nRMSE = 33%
reference PM2.5 / (µg/m³)
ag PM2.5 / (µg/m³)
Raw
ag XXXXXXXXX4bc man0 1440min
1:1 line
Start: 2023-11-01 / End: 2024-12-31
RH / %
26
36
46
56
N = 126
R² = 0.99
Intercept = 1.34
Slope = 0.63
RMSE = 2.61
nRMSE = 57%
reference PM2.5 / (µg/m³)
ag PM2.5 / (µg/m³)
Corrected
ag XXXXXXXXX4bc man0 1440min
1:1 line
Start: 2023-11-01 / End: 2024-12-31
RH / %
26
36
46
56
N = 126
R² = 0.96
Intercept = −0.67
Slope = 1.05
RMSE = 0.96
nRMSE = 21%
reference PM2.5 / (µg/m³)
ag PM2.5 / (µg/m³)

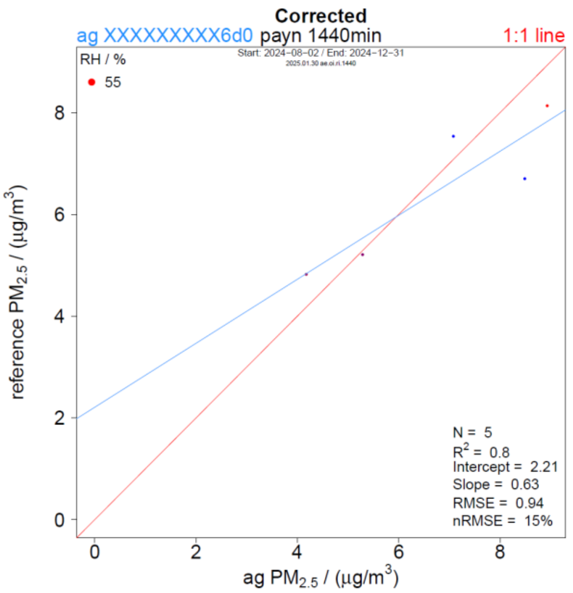

Raw
ag XXXXXXXXX4d4 newy 1440min
1:1 line
Start: 2023-10-02 / End: 2024-11-16
RH / %
27
37
47
57
67
N = 44
R^2 = 0.72
Intercept = 5.02
Slope = 0.26
RMSE = 9.74
nRMSE = 110%
reference PM$_{2.5}$ / (µg/m^3)
ag PM$_{2.5}$ / (µg/m^3)

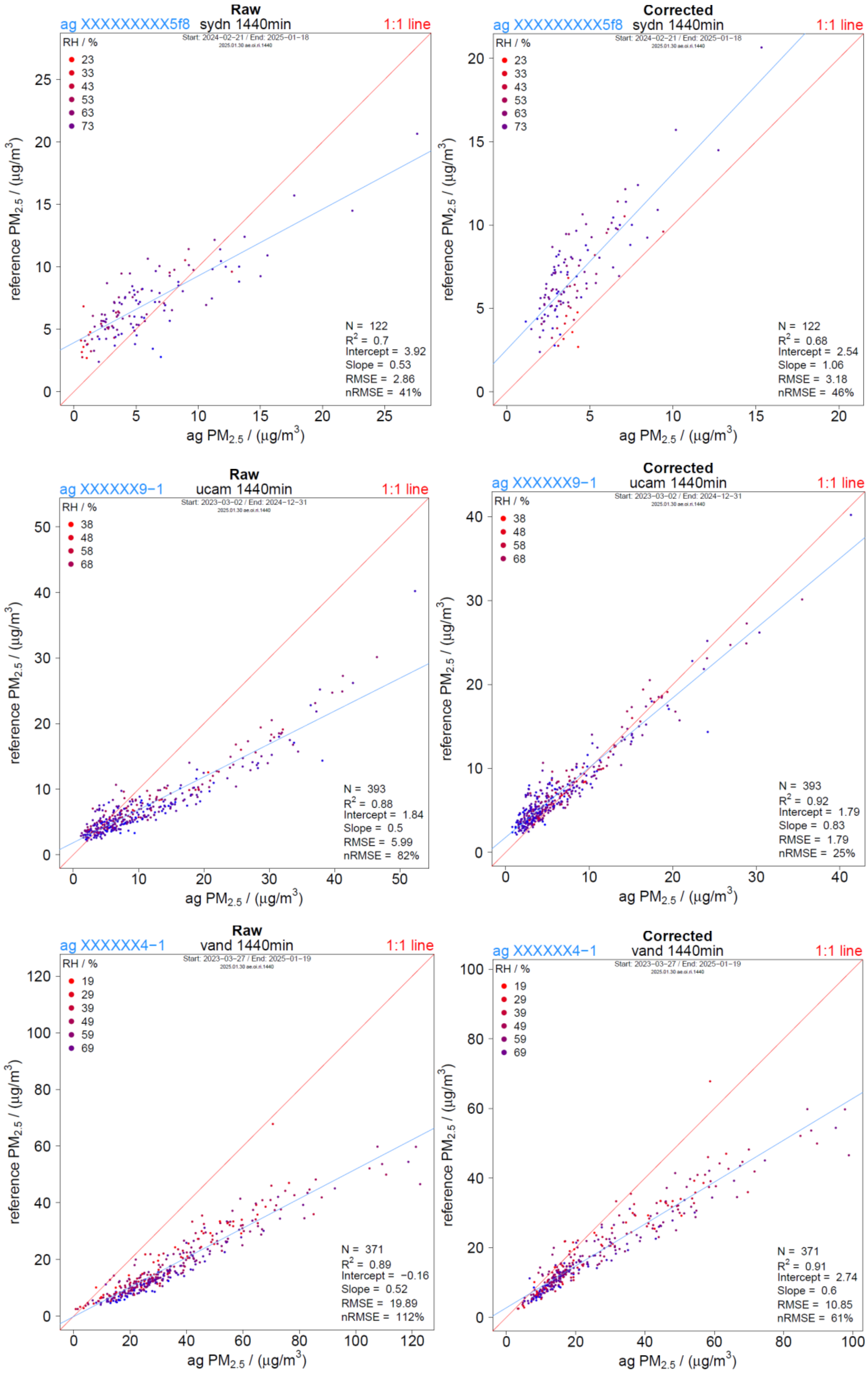

Corrected
ag XXXXXXXXX4d4 newy 1440min
1:1 line
Start: 2023-10-02 / End: 2024-11-16
RH / %
27
37
47
57
67
N = 44
R^2 = 0.82
Intercept = 4.32
Slope = 0.48
RMSE = 3.4
nRMSE = 38%
reference PM$_{2.5}$ / (µg/m^3)
ag PM$_{2.5}$ / (µg/m^3)


Raw
ag XXXXXXXXX118 otta 1440min
1:1 line
Start: 2023-06-02 / End: 2024-12-31
RH / %
29
39
49
59
69
N = 282
R^2 = 0.93
Intercept = −0.5
Slope = 0.65
RMSE = 7.95
nRMSE = 105%
reference PM$_{2.5}$ / (µg/m^3)
ag PM$_{2.5}$ / (µg/m^3)


Corrected
ag XXXXXXXXX118 otta 1440min
1:1 line
Start: 2023-06-02 / End: 2024-12-31
RH / %
29
39
49
59
69
N = 282
R^2 = 0.97
Intercept = 0.07
Slope = 0.9
RMSE = 2.22
nRMSE = 29%
reference PM$_{2.5}$ / (µg/m^3)
ag PM$_{2.5}$ / (µg/m^3)


Raw
ag XXXXXXXXX6d0 payn 1440min
1:1 line
Start: 2024-08-02 / End: 2024-12-31
RH / %
55
N = 5
R^2 = 0.79
Intercept = 2.79
Slope = 0.33
RMSE = 5.41
nRMSE = 83%
reference PM$_{2.5}$ / (µg/m^3)
ag PM$_{2.5}$ / (µg/m^3)


Corrected
ag XXXXXXXXX6d0 payn 1440min
1:1 line
Start: 2024-08-02 / End: 2024-12-31
RH / %
55
N = 5
R^2 = 0.8
Intercept = 2.21
Slope = 0.63
RMSE = 0.94
nRMSE = 15%
reference PM$_{2.5}$ / (µg/m^3)
ag PM$_{2.5}$ / (µg/m^3)


Raw
ag XXXXXXXXX5f8 sydn 1440min
1:1 line
Start: 2024-02-21 / End: 2025-01-18
RH / %
23
33
43
53
63
73
N = 122
R^2 = 0.7
Intercept = 3.92
Slope = 0.53
RMSE = 2.86
nRMSE = 41%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)
Corrected
ag XXXXXXXXX5f8 sydn 1440min
1:1 line
Start: 2024-02-21 / End: 2025-01-18
RH / %
23
33
43
53
63
73
N = 122
R^2 = 0.68
Intercept = 2.54
Slope = 1.06
RMSE = 3.18
nRMSE = 46%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)
Raw
ag XXXXXX9-1 ucam 1440min
1:1 line
Start: 2023-03-02 / End: 2024-12-31
RH / %
38
48
58
68
N = 393
R^2 = 0.88
Intercept = 1.84
Slope = 0.5
RMSE = 5.99
nRMSE = 82%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)
Corrected
ag XXXXXX9-1 ucam 1440min
1:1 line
Start: 2023-03-02 / End: 2024-12-31
RH / %
38
48
58
68
N = 393
R^2 = 0.92
Intercept = 1.79
Slope = 0.83
RMSE = 1.79
nRMSE = 25%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)
Raw
ag XXXXXX4-1 vand 1440min
1:1 line
Start: 2023-03-27 / End: 2025-01-19
RH / %
19
29
39
49
59
69
N = 371
R^2 = 0.89
Intercept = −0.16
Slope = 0.52
RMSE = 19.89
nRMSE = 112%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)
Corrected
ag XXXXXX4-1 vand 1440min
1:1 line
Start: 2023-03-27 / End: 2025-01-19
RH / %
19
29
39
49
59
69
N = 371
R^2 = 0.91
Intercept = 2.74
Slope = 0.6
RMSE = 10.85
nRMSE = 61%
reference $PM_{2.5}$ / (µg/m^3)
ag $PM_{2.5}$ / (µg/m^3)

A detailed overview of correlation parameters per location for daily raw (top) and corrected (bottom) PM2.5 data from AirGradient 'OpenAir' monitors (located outdoors). The 'mean' refers to the reference data.

City	**N**	**R^2**	**Intercept / ($\mu g/m^3$)**	**Slope**	**MAE / ($\mu g/m^3$)**	**RMSE / ($\mu g/m^3$)**	**Mean / ($\mu g/m^3$)**	**nRMSE / %**
				Raw				
Anacortes	528	0.85	2.12	0.43	2.92	4.81	5.425	89
Bellingham	899	0.775	3.17	0.445	2.59	3.885	5.765	67
Bogota	69	0.93	2.76	0.8	1.97	2.485	13.83	18
Brussels	156	0.907	0.733	0.437	8.963	11.083	8.17	136
Chennai	100	0.97	-2.74	0.755	11.53	12.75	24.47	52
Chiang Mai	348	0.99	3.442	0.745	23.657	28.225	82.46	34
Edmonton 1	251	0.97	1.01	0.61	8.22	13.19	14.76	89
Dübendorf	831	0.783	1.403	0.467	5.347	7.367	6.99	105
Guatemala City	42	0.93	-9.81	1.905	5.835	13.79	17.48	79
London 1	2191	0.798	4.967	0.442	4.17	6.015	10.682	56
London 2	1682	0.83	1.81	0.418	4.75	6.772	6.33	107
New York	13266	0.868	1.305	0.607	6.661	9.019	14.209	78
Ottawa	132	0.727	5.167	0.277	5.83	8.5	8.85	96
Paynes Prairie	567	0.93	-0.46	0.65	5.24	7.825	7.465	105
Sydney	10	0.78	2.715	0.33	4.905	5.455	6.48	84
Cambridge	122	0.7	3.92	0.53	2.41	2.86	6.91	41
Vanderbijlpark	2358	0.875	1.972	0.518	3.86	5.562	7.27	77
Average	*12513*	*0.861*	*1.302*	*0.605*	*6.964*	*9.403*	*14.774*	*79*
				Corrected				
Anacortes	528	0.89	1.995	0.695	1.3	1.86	5.425	34
Bellingham	899	0.755	2.865	0.69	2.105	2.545	5.765	44
Bogota	69	0.955	0.195	1.34	3.685	4.32	13.83	31
Brussels	156	0.953	0.977	0.67	2.713	3.747	8.17	46
Chennai	100	0.98	3.765	0.845	2.73	3.565	24.47	15
Chiang Mai	348	0.982	9.963	0.838	6.98	11.385	82.46	14
Edmonton 1	251	0.97	2.15	0.78	2.89	5.7	14.76	39
Dübendorf	831	0.79	1.563	0.733	1.217	2.723	6.99	39
Guatemala City	42	0.975	-6.97	2.54	8.2	17.51	17.48	100
London 1	2191	0.845	4.81	0.71	2.995	3.46	10.682	32
London 2	1682	0.845	1.695	0.68	1.638	2.315	6.33	37
New York	132	0.833	4.203	0.537	2.233	2.88	8.85	33
Ottawa	567	0.97	0.015	0.905	1.125	2.18	7.465	29
Paynes Prairie	10	0.79	2.185	0.64	0.73	0.91	6.48	14
Sydney	122	0.68	2.54	1.06	2.81	3.18	6.91	46
Cambridge	2358	0.91	1.582	0.87	1.41	1.885	7.27	26
Vanderbijlpark	2227	0.908	2.842	0.608	7.15	10.437	17.82	59
Average	*12513*	*0.884*	*2.140*	*0.891*	*3.054*	*4.741*	*14.774*	*38*

A summary of correlation parameters for the AirGradient monitors (outdoor and indoor) that were used for the analysis discussed in this blog. It reveals information about reproducibility. This page: raw data. Next page: corrected data. The 'mean' refers to the reference data.

Raw									
Location	**Sensor ID**	**N**	**R^2**	**Intercept / (μg/m^3)**	**Slope**	**MAE / (μg/m^3)**	**RMSE / (μg/m^3)**	**Mean / (μg/m^3)**	**nRMSE / %**
anac	XXXXXXXXX2d8	392	0.8	2.18	0.39	2.84	4.31	4.92	88
anac	XXXXXXXXXaa8	136	0.9	2.06	0.47	3	5.31	5.93	90
bell	XXXXXXXXXcb4	450	0.82	2.79	0.44	2.59	3.96	5.75	69
bell	XXXXXXXXXd94	449	0.73	3.55	0.45	2.59	3.81	5.78	66
bogo	XXXXXXXXX608	38	0.93	3.11	0.77	2.26	2.75	14.52	19
bogo	XXXXXXXXXd5c	31	0.93	2.41	0.83	1.68	2.22	13.14	17
brus	XXXXXXXXX4ec	52	0.91	0.82	0.44	8.76	10.91	8.17	134
brus	XXXXXXXXX6dc	52	0.9	0.76	0.44	8.7	10.79	8.17	132
brus	XXXXXXXXXe14	52	0.91	0.62	0.43	9.43	11.55	8.17	141
chen	XXXXXXXXX460	50	0.97	-3.03	0.76	11.71	12.86	24.47	53
chen	XXXXXXXXXe2c	50	0.97	-2.45	0.75	11.35	12.64	24.47	52
chia	XXXXXX3-1	87	0.99	4.11	0.77	19.54	23.78	82.46	29
chia	XXXXXX3-2	87	0.99	2.13	0.77	22.37	26.34	82.46	32
chia	XXXXXX6-1	87	0.99	2.46	0.75	23.51	27.73	82.46	34
chia	XXXXXX6-2	87	0.99	5.07	0.69	29.21	35.05	82.46	43
edm1	XXXXXXXXXee4	251	0.97	1.01	0.61	8.22	13.19	14.76	89
empa	XXXXXXXXXb20	277	0.68	2.2	0.42	4.89	7.63	6.99	109
empa	XXXXXXXXXe58	277	0.83	1.03	0.46	6.19	8.04	6.99	115
empa	XXXXXXXXXf48	277	0.84	0.98	0.52	4.96	6.43	6.99	92
guat	XXXXX7-1	21	0.93	-10.97	1.91	6.17	13.73	17.48	79
guat	XXXXX7-2	21	0.93	-8.65	1.9	5.5	13.85	17.48	79
lon1	XXXXXX4-1	549	0.8	5.04	0.46	3.92	5.5	10.68	51
lon1	XXXXXX4-2	549	0.8	4.85	0.43	4.38	6.44	10.68	60
lon1	XXXXXX6-1	548	0.79	4.93	0.43	4.37	6.33	10.68	59
lon1	XXXXXX6-2	545	0.8	5.05	0.45	4.01	5.79	10.69	54
lon2	XXXX2-1	393	0.84	1.88	0.43	4.28	6.28	6.34	99
lon2	XXXX2-2	393	0.84	1.4	0.43	5.34	7.2	6.34	114
lon2	XXXXXX3-1	448	0.82	2	0.42	4.33	6.31	6.32	100
lon2	XXXXXX3-2	448	0.82	1.96	0.39	5.05	7.3	6.32	116
man0	XXXXXXXXX35c	126	0.99	1.2	0.63	1.54	2.68	4.6	58
man0	XXXXXXXXX4bc	126	0.99	1.34	0.63	1.56	2.61	4.6	57
man0	XXXXXXXXX640	125	0.99	1.2	0.61	1.69	2.94	4.6	64
man0	XXXXXXXXX890	126	0.99	1.47	0.63	1.55	2.51	4.6	55
man0	XXXXXXXXXd84	125	0.99	1.49	0.67	1.4	2.17	4.6	47
man0	XXXXXXXXXfec	125	0.99	1.48	0.69	1.33	1.97	4.6	43
newy	XXXXXXXXX4d4	44	0.72	5.02	0.26	6.67	9.74	8.85	110
newy	XXXXXXXXXa24	44	0.73	5.26	0.28	5.51	8.11	8.85	92
newy	XXXXXXXXXd20	44	0.73	5.22	0.29	5.31	7.65	8.85	86
otta	XXXXXXXXX118	282	0.93	-0.5	0.65	5.33	7.95	7.56	105
otta	XXXXXXXXX170	285	0.93	-0.42	0.65	5.15	7.7	7.37	104
payn	XXXXXXXXX480	5	0.77	2.64	0.33	4.98	5.5	6.48	85
payn	XXXXXXXXX6d0	5	0.79	2.79	0.33	4.83	5.41	6.48	83
sydn	XXXXXXXXX5f8	122	0.7	3.92	0.53	2.41	2.86	6.91	41
ucam	XXXXXX9-1	393	0.88	1.84	0.5	4.14	5.99	7.27	82
ucam	XXXXXX9-2	393	0.89	1.79	0.5	4.15	6.01	7.27	83
ucam	XXXXXXX0-1	393	0.88	1.75	0.5	4.25	6.11	7.27	84
ucam	XXXXXXX0-2	393	0.89	1.83	0.53	3.61	5.29	7.27	73
ucam	XXXXXXX5-1	393	0.83	2.87	0.59	2.67	3.68	7.27	51
ucam	XXXXXXX5-2	393	0.88	1.75	0.49	4.34	6.29	7.27	87
vand	XXXXXX4-1	371	0.89	-0.16	0.52	16.76	19.89	17.8	112
vand	XXXXXX4-2	371	0.89	-0.03	0.54	15.02	17.94	17.85	101
vand	XXXXXX5-1	371	0.89	0.2	0.52	16.29	19.56	17.8	110
vand	XXXXXX5-2	371	0.9	0.22	0.52	16.32	19.6	17.84	110
vand	XXXXXXX5-1	372	0.9	-0.23	0.56	14.72	17.47	17.8	98
vand	XXXXXXX5-2	371	0.89	-0.28	0.51	17.99	21.25	17.83	119

Corrected									
Location	**Sensor ID**	**N**	**R^2**	**Intercept / ($\mu g/m^3$)**	**Slope**	**MAE / ($\mu g/m^3$)**	**RMSE / ($\mu g/m^3$)**	**Mean / ($\mu g/m^3$)**	**nRMSE / %**
anac	XXXXXXXXX2d8	392	0.86	1.87	0.69	1.19	1.55	4.92	32
anac	XXXXXXXXXaa8	136	0.92	2.12	0.7	1.41	2.17	5.93	37
bell	XXXXXXXXXcb4	450	0.82	2.44	0.71	1.64	2.06	5.75	36
bell	XXXXXXXXXd94	449	0.69	3.29	0.67	2.57	3.03	5.78	52
bogo	XXXXXXXXX608	38	0.96	0.23	1.35	3.95	4.58	14.52	32
bogo	XXXXXXXXXd5c	31	0.95	0.16	1.33	3.42	4.06	13.14	31
brus	XXXXXXXXX4ec	52	0.95	1.05	0.67	2.56	3.59	8.17	44
brus	XXXXXXXXX6dc	52	0.95	0.85	0.69	2.62	3.57	8.17	44
brus	XXXXXXXXXe14	52	0.96	1.03	0.65	2.96	4.08	8.17	50
chen	XXXXXXXXX460	50	0.98	3.58	0.85	2.65	3.5	24.47	14
chen	XXXXXXXXXe2c	50	0.98	3.95	0.84	2.81	3.63	24.47	15
chia	XXXXXX3-1	87	0.98	10.15	0.87	4.96	8.48	82.46	10
chia	XXXXXX3-2	87	0.99	7.79	0.87	5.83	8.97	82.46	11
chia	XXXXXX6-1	87	0.98	9.08	0.85	6.47	10.32	82.46	13
chia	XXXXXX6-2	87	0.98	12.83	0.76	10.66	17.77	82.46	22
edm1	XXXXXXXXXee4	251	0.97	2.15	0.78	2.89	5.7	14.76	39
empa	XXXXXXXXXb20	277	0.6	2.83	0.58	1.25	4.03	6.99	58
empa	XXXXXXXXXe58	277	0.88	1.14	0.74	1.47	2.47	6.99	35
empa	XXXXXXXXXf48	277	0.89	0.72	0.88	0.93	1.67	6.99	24
guat	XXXXX7-1	21	0.97	-7.67	2.52	7.92	17.31	17.48	99
guat	XXXXX7-2	21	0.98	-6.27	2.56	8.48	17.71	17.48	101
lon1	XXXXXX4-1	549	0.84	4.73	0.75	3.13	3.56	10.68	33
lon1	XXXXXX4-2	549	0.85	4.83	0.68	2.87	3.36	10.68	31
lon1	XXXXXX6-1	548	0.84	4.82	0.69	2.89	3.39	10.68	32
lon1	XXXXXX6-2	545	0.85	4.86	0.72	3.09	3.53	10.69	33
lon2	XXXX2-1	393	0.86	1.64	0.71	1.48	2.09	6.34	33
lon2	XXXX2-2	393	0.85	1.43	0.69	1.68	2.35	6.34	37
lon2	XXXXXX3-1	448	0.83	1.86	0.69	1.56	2.16	6.32	34
lon2	XXXXXX3-2	448	0.84	1.85	0.63	1.83	2.66	6.32	42
man0	XXXXXXXXX35c	126	0.97	-0.85	1.06	0.81	0.98	4.6	21
man0	XXXXXXXXX4bc	126	0.96	-0.67	1.05	0.8	0.96	4.6	21
man0	XXXXXXXXX640	125	0.96	-0.87	1.02	0.95	1.1	4.6	24
man0	XXXXXXXXX890	126	0.96	-0.79	1.06	0.81	0.99	4.6	22
man0	XXXXXXXXXd84	125	0.95	-1.02	1.11	0.91	1.1	4.6	24
man0	XXXXXXXXXfec	125	0.96	-1.1	1.17	0.88	1.08	4.6	23
newy	XXXXXXXXX4d4	44	0.82	4.32	0.48	2.42	3.4	8.85	38
newy	XXXXXXXXXa24	44	0.84	4.23	0.55	2.21	2.72	8.85	31
newy	XXXXXXXXXd20	44	0.84	4.06	0.58	2.07	2.52	8.85	28
otta	XXXXXXXXX118	282	0.97	0.07	0.9	1.14	2.22	7.56	29
otta	XXXXXXXXX170	285	0.97	-0.04	0.91	1.11	2.14	7.37	29
payn	XXXXXXXXX480	5	0.78	2.16	0.65	0.71	0.88	6.48	14
payn	XXXXXXXXX6d0	5	0.8	2.21	0.63	0.75	0.94	6.48	15
sydn	XXXXXXXXX5f8	122	0.68	2.54	1.06	2.81	3.18	6.91	46
ucam	XXXXXX9-1	393	0.92	1.79	0.83	1.36	1.79	7.27	25
ucam	XXXXXX9-2	393	0.92	1.61	0.83	1.28	1.7	7.27	23
ucam	XXXXXXX0-1	393	0.92	1.32	0.83	1.21	1.64	7.27	23
ucam	XXXXXXX0-2	393	0.93	1.45	0.9	1.23	1.63	7.27	22
ucam	XXXXXXX5-1	393	0.85	1.92	1.02	2.09	2.78	7.27	38
ucam	XXXXXXX5-2	393	0.92	1.4	0.81	1.29	1.77	7.27	24
vand	XXXXXX4-1	371	0.91	2.74	0.6	7.54	10.85	17.8	61
vand	XXXXXX4-2	371	0.91	2.91	0.63	6.22	9.3	17.85	52
vand	XXXXXX5-1	371	0.9	2.97	0.6	7.33	10.76	17.8	60
vand	XXXXXX5-2	371	0.91	3.01	0.6	7.31	10.8	17.84	61
vand	XXXXXXX5-1	372	0.91	2.76	0.64	6.06	8.99	17.8	51
vand	XXXXXXX5-2	371	0.91	2.66	0.58	8.44	11.92	17.83	67