

Appendix 1: Figures and Tables of correlations and statistics of different models in the UK (Carslaw, 2011).
[\(\[http://uk-air.defra.gov.uk/library/reports?report_id=652\]\(http://uk-air.defra.gov.uk/library/reports?report_id=652\)\)](http://uk-air.defra.gov.uk/library/reports?report_id=652)

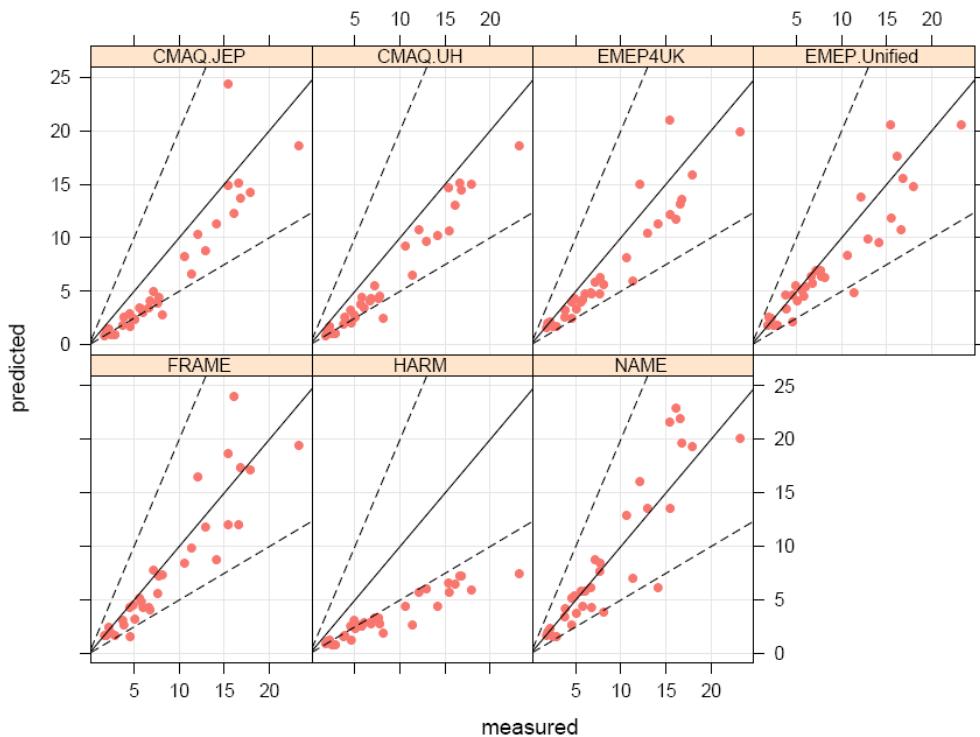


Figure 9: Measured versus predicted annual mean NO_2 concentrations ($\mu\text{g m}^{-3}$).

Table 3: Summary model evaluation statistics for annual mean NO_2 concentrations.

group	n	FAC2	MB	MGE	NMB	NMGE	RMSE	r
CMAQ.JEP	32.00	0.72	-2.24	2.79	-0.25	0.32	3.23	0.92
CMAQ.UH	32.00	0.84	-2.41	2.41	-0.27	0.27	2.74	0.97
EMEP4UK	32.00	1.00	-1.58	2.11	-0.18	0.24	2.52	0.94
EMEPUnified	32.00	0.94	-1.13	1.80	-0.13	0.20	2.48	0.92
FRAME	32.00	0.97	-0.85	1.91	-0.10	0.22	2.60	0.92
HARM	32.00	0.12	-5.32	5.32	-0.60	0.60	6.47	0.94
NAME	32.00	0.94	0.02	2.05	0.00	0.23	2.95	0.91

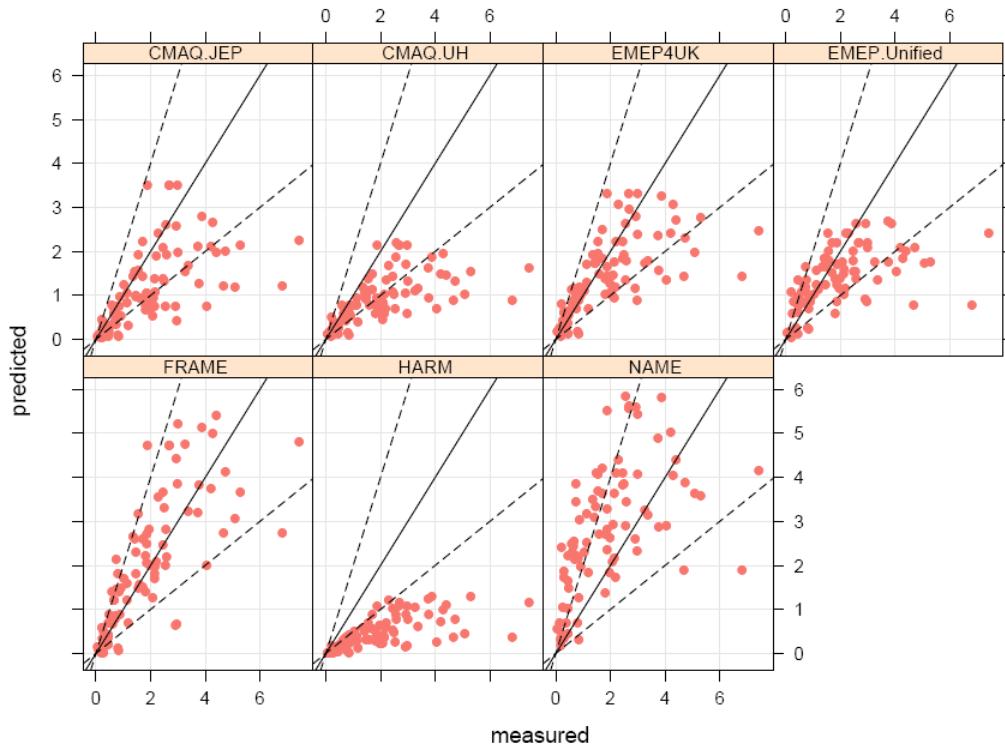


Figure 17: Measured versus predicted annual mean ammonia concentrations ($\mu\text{g m}^{-3}$).

Table 4: Summary model evaluation statistics for annual mean ammonia concentrations.

group	n	FAC2	MB	MGE	NMB	NMGE	RMSE	r
CMAQ.JEP	87.00	0.62	-0.77	0.92	-0.40	0.48	1.45	0.61
CMAQ.UH	87.00	0.55	-1.02	1.05	-0.53	0.55	1.62	0.63
EMEP4UK	88.00	0.75	-0.47	0.78	-0.24	0.41	1.25	0.66
EMEPUnified	88.00	0.66	-0.57	0.87	-0.30	0.46	1.39	0.57
FRAME	88.00	0.78	0.14	0.75	0.07	0.39	1.08	0.75
HARM	88.00	0.10	-1.43	1.43	-0.75	0.75	1.95	0.66
NAME	88.00	0.53	0.89	1.34	0.47	0.70	1.67	0.56

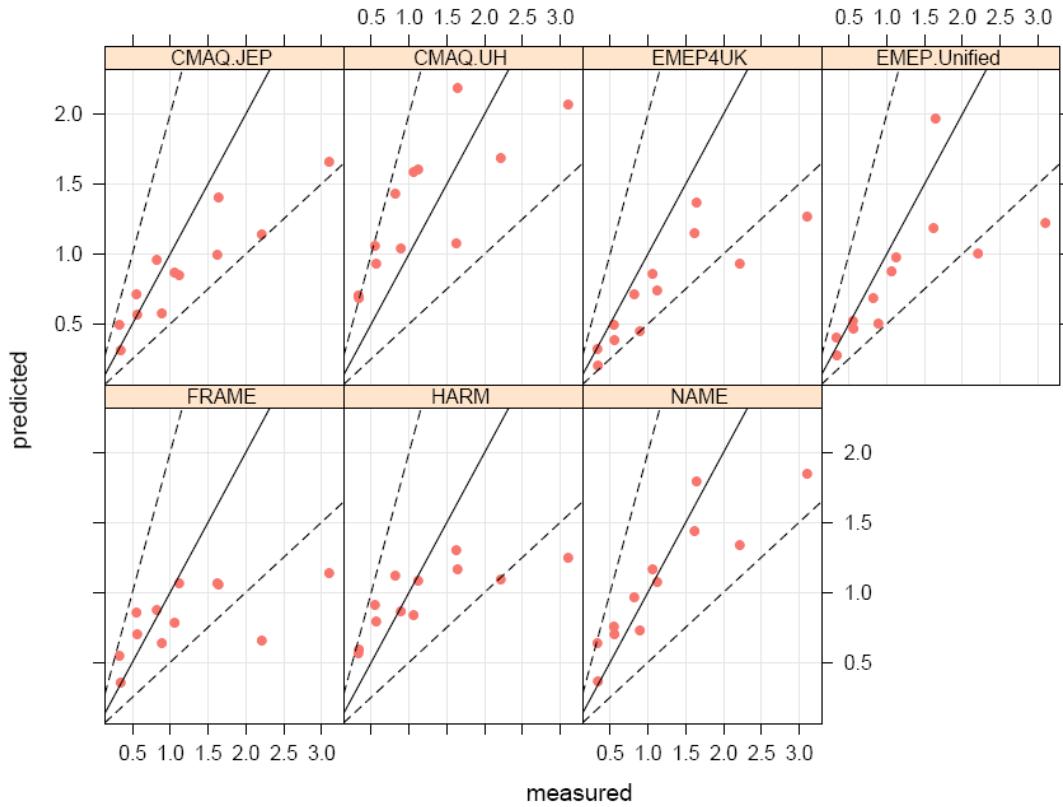


Figure 25: Measured versus predicted annual mean HNO_3 concentrations ($\mu\text{g m}^{-3}$).

Table 5: Summary model evaluation statistics for annual mean HNO_3 concentrations.

group	n	FAC2	MB	MGE	NMB	NMGE	RMSE	r
CMAQ.JEP	12.00	1.00	-0.31	0.39	-0.26	0.33	0.58	0.91
CMAQ.UH	12.00	0.92	0.15	0.50	0.12	0.42	0.54	0.78
EMEP4UK	12.00	0.75	-0.45	0.45	-0.38	0.38	0.70	0.84
EMEPUnified	12.00	0.83	-0.35	0.42	-0.29	0.35	0.68	0.69
FRAME	12.00	0.83	-0.38	0.50	-0.32	0.42	0.78	0.61
HARM	12.00	0.83	-0.23	0.45	-0.19	0.38	0.68	0.76
NAME	12.00	1.00	-0.13	0.30	-0.11	0.25	0.47	0.89

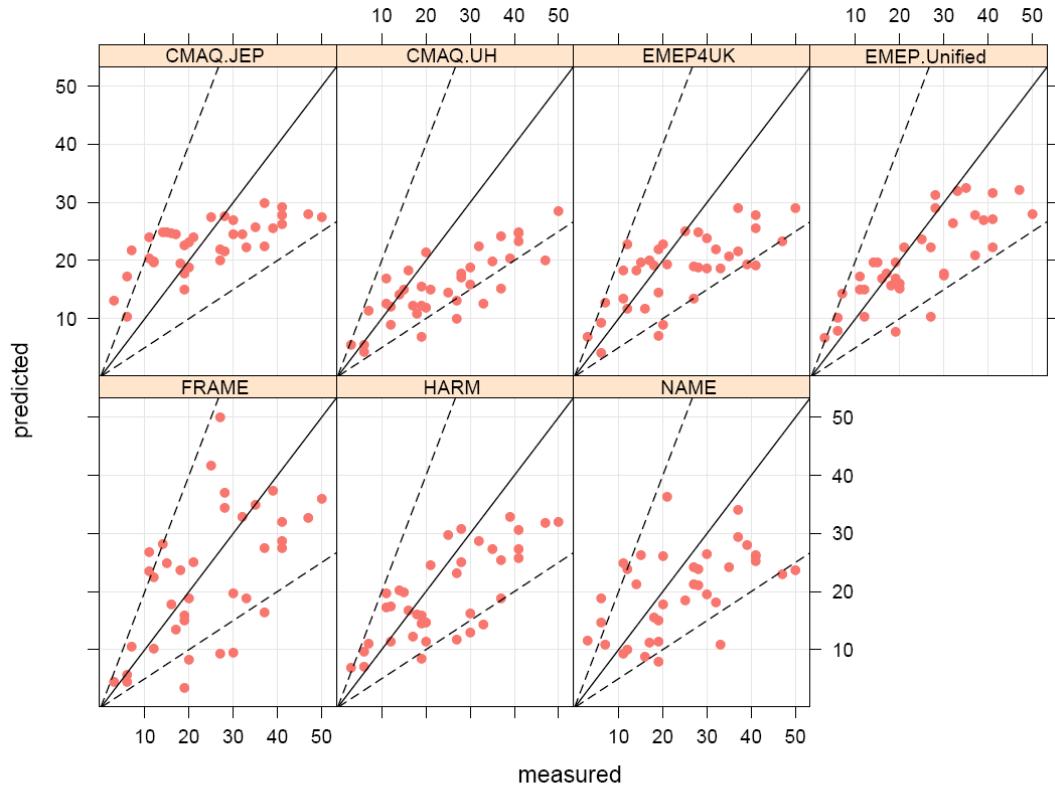


Figure 73: Measured versus predicted annual mean ammonium in precipitation concentrations.

Table 11: Summary model evaluation statistics for annual mean ammonium in precipitation concentrations.

group	n	FAC2	MB	MGE	NMB	NMGE	RMSE	r
CMAQ.JEP	37.00	0.89	-1.26	8.28	-0.05	0.34	9.72	0.70
CMAQ.UH	37.00	0.84	-8.61	9.62	-0.36	0.40	12.00	0.79
EMEP4UK	37.00	0.84	-5.66	8.52	-0.23	0.35	10.62	0.70
EMEP.Unified	37.00	0.89	-4.01	6.67	-0.17	0.28	8.78	0.79
FRAME	37.00	0.78	-1.73	9.08	-0.07	0.38	11.17	0.57
HARM	37.00	0.86	-4.67	7.73	-0.19	0.32	9.43	0.75
NAME	37.00	0.78	-3.98	9.39	-0.16	0.39	11.17	0.52

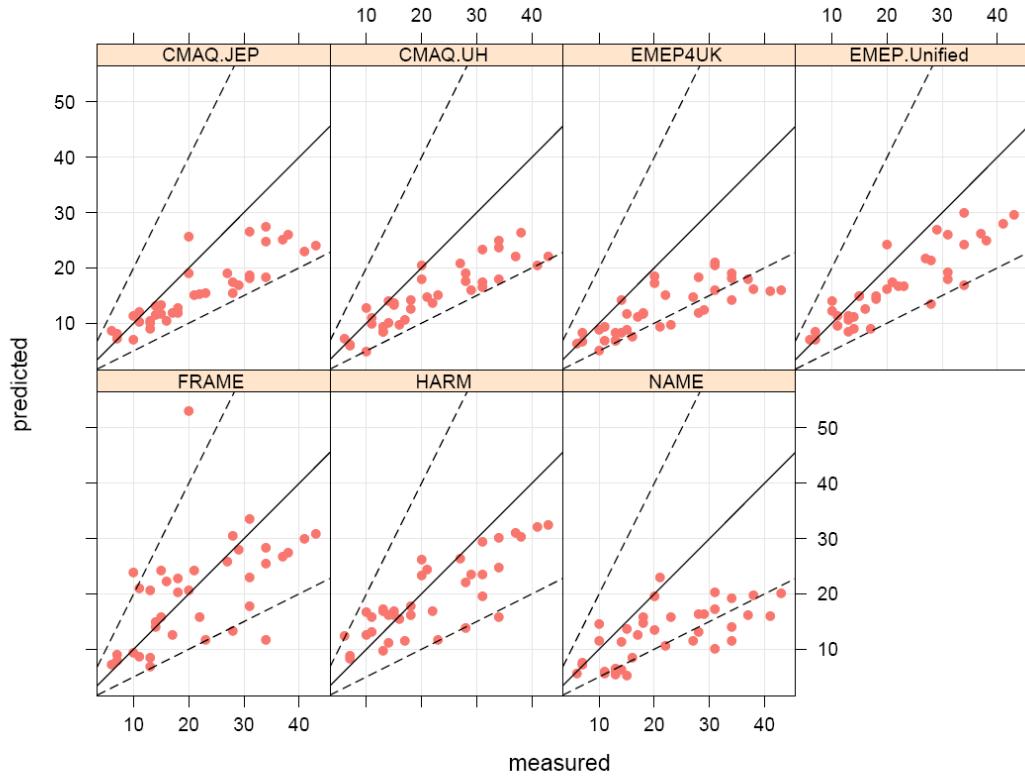


Figure 65: Measured versus predicted annual mean nitrate in precipitation concentrations.

Table 10: Summary model evaluation statistics for annual mean nitrate in precipitation concentrations.

group	n	FAC2	MB	MGE	NMB	NMGE	RMSE	r
CMAQ.JEP	37.00	1.00	-5.84	6.51	-0.27	0.30	8.22	0.88
CMAQ.UH	37.00	0.95	-6.65	6.91	-0.31	0.32	8.87	0.89
EMEP4UK	37.00	0.73	-9.13	9.24	-0.42	0.43	11.67	0.79
EMEPUnified	37.00	0.95	-4.87	5.60	-0.23	0.26	7.26	0.88
FRAME	37.00	0.89	-1.34	6.92	-0.06	0.32	9.60	0.54
HARM	37.00	0.92	-2.37	5.23	-0.11	0.24	6.57	0.81
NAME	37.00	0.65	-8.92	9.41	-0.41	0.44	11.87	0.67