Concentrations and chemical composition of ultrafine particulate matter over Europe

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Table S1. PMCAMx-UF daily prediction skill metrics of $PV_{0.1}$ in ($\mu m^3\ cm^{-3}$) during 5 June - 8 July 2012 for the 12 measurement sites.

Station	**Mean Predicted** ($\mu m^3\ cm^{-3}$)	**Mean Observed** ($\mu m^3\ cm^{-3}$)	**NMB** (%)	**NME** (%)
Dresden	0.42	0.59	-29	32
Kosetice	0.39	0.26	53	57
Hohenpeissenberg	0.21	0.26	-19	36
Mace Head	0.05	0.06	-15	64
Finokalia	0.39	0.36	6	29
Vavihill	0.47	0.28	66	69
Helsinki	0.44	0.48	-9	29
Melpitz	0.41	0.33	24	38
Hyytiala	0.23	0.23	-0.5	46
Waldhof	0.50	0.31	63	66
Aspvreten	0.48	0.23	109	115
Varrio	0.10	0.10	-4	49

Table S2. PMCAMx-UF daily prediction skill metrics of $PV_{0.1}$ in ($\mu m^3\ cm^{-3}$) during 1-30 January 2009 for the 12 measurement sites.

Station	**Mean Predicted** ($\mu m^3\ cm^{-3}$)	**Mean Observed** ($\mu m^3\ cm^{-3}$)	**NMB** (%)	**NME** (%)
Dresden	0.26	1.05	-76	76
Kosetice	0.24	0.46	-47	52
Hohenpeissenberg	0.15	0.19	-18	36
Mace Head	0.02	0.09	-80	80
Finokalia	0.07	0.14	-52	60
Vavihill	0.24	0.21	13	59
Helsinki	0.18	0.35	-47	59
Melpitz	0.27	0.28	-3	46
Hyytiala	0.16	0.07	130	174
Waldhof	0.26	0.27	-5	40
Aspvreten	0.11	0.08	28	99
Varrio	0.09	0.02	399	424

Table S3. Average predicted total concentration of $PM_{0.1}$ secondary organic aerosol ($\mu g\ m^{-3}$) and its anthropogenic, biogenic and extremely low volatility fractions during 5 June - 8 July 2012.

Site	Mean total SOA ($\mu g\ m^{-3}$)	Anthropogenic SOA (%)	Biogenic SOA (%)	ELSOA (%)
Athens	0.26	64.7	27.6	7.7
Patra	0.19	59.5	29.5	11.0
Finokalia	0.16	72.6	20.6	6.8
Montseny	0.34	53.9	29.4	16.7
Paris	0.18	49.7	28.8	21.5
Zurich	0.22	50.0	30.2	19.8
Ispra	0.35	53.3	29.8	16.9
Bucharest	0.41	53.5	35.6	10.9
Helsinki	0.28	39.7	35.1	25.2
Birmingham	0.13	49.6	26.0	24.4

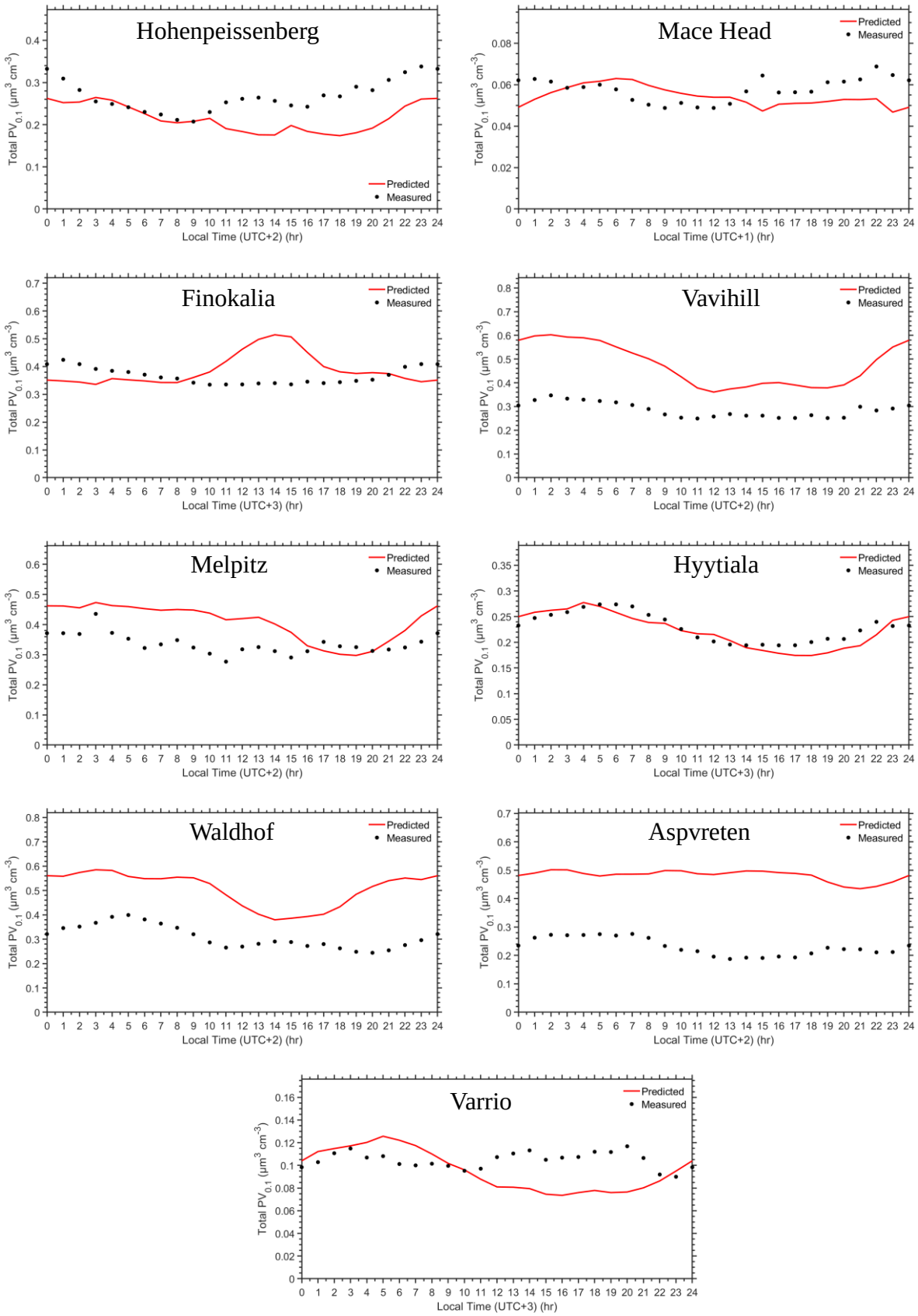

Figure S1. Average diurnal profile of predicted and measured total volume concentrations in $\mu m^3\ cm^{-3}$ for the period of 5 June - 8 July 2012 in different sites.

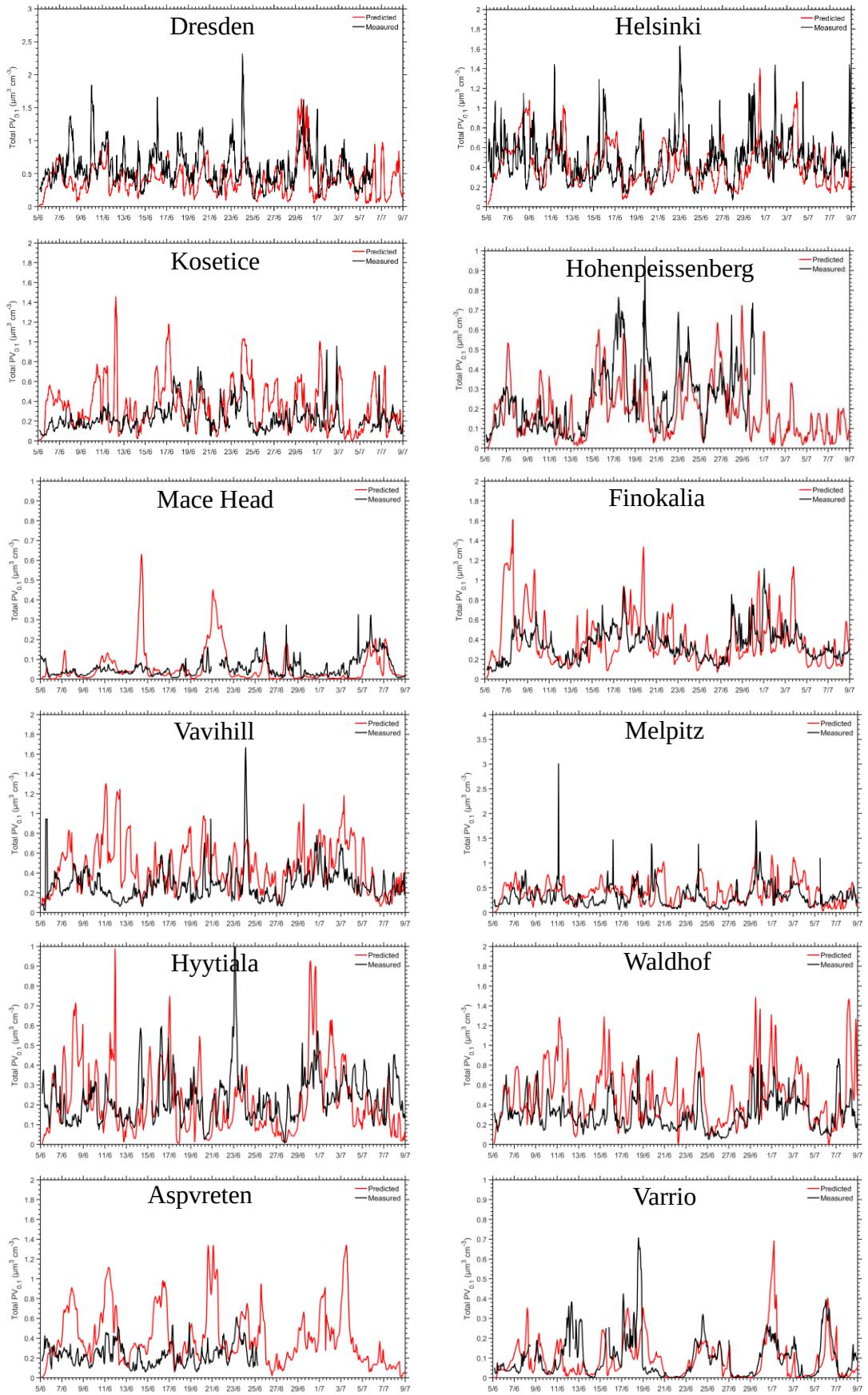

Figure S2. Timeseries of predicted and measured total volume concentrations in μm^3 cm^{-3} for the period of 5 June - 8 July 2012 in different sites.

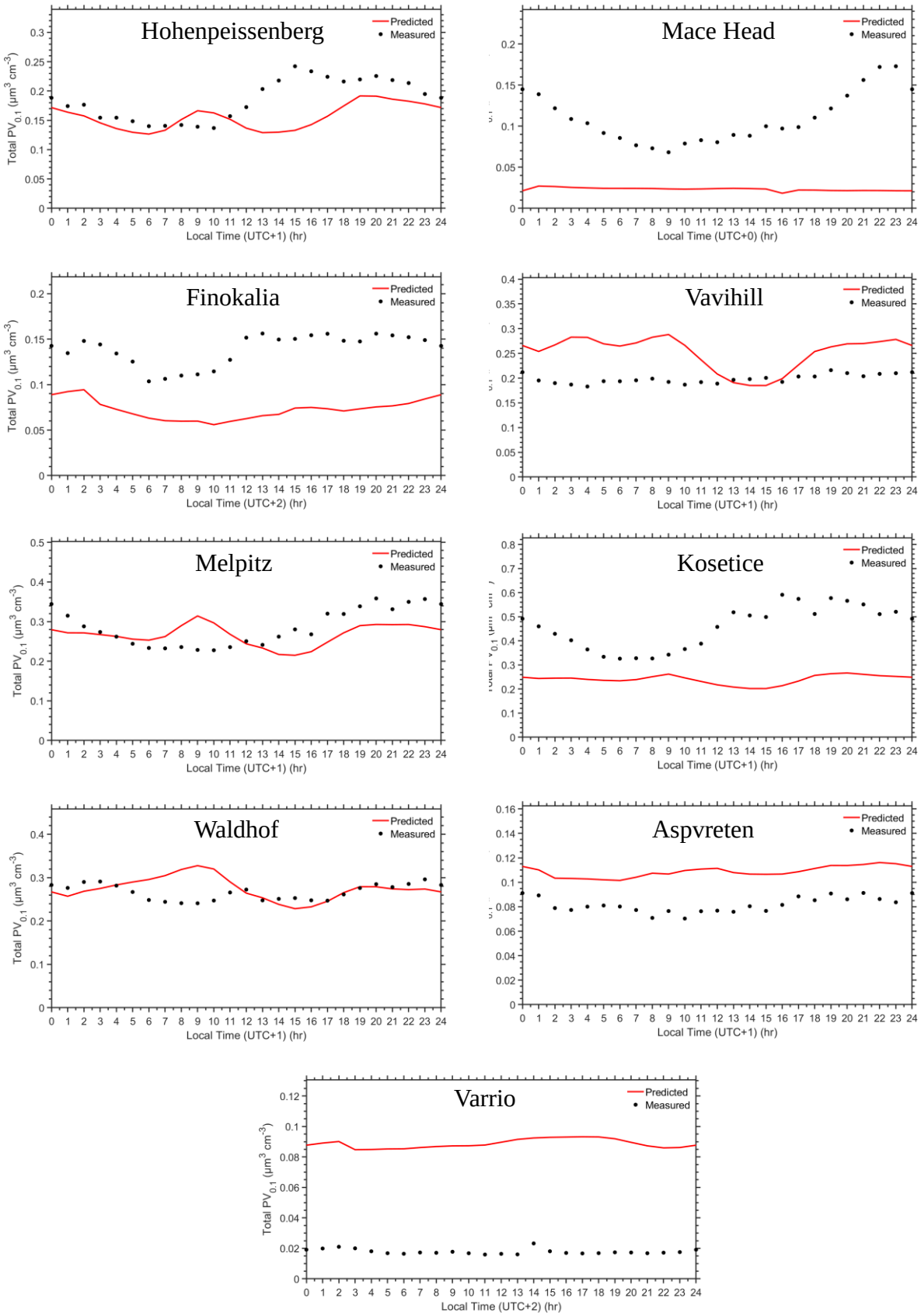

Figure S3. Average diurnal profile of predicted and measured total volume concentrations in $\mu m^3\ cm^{-3}$ for the period of 1-30 January 2009 in different sites.

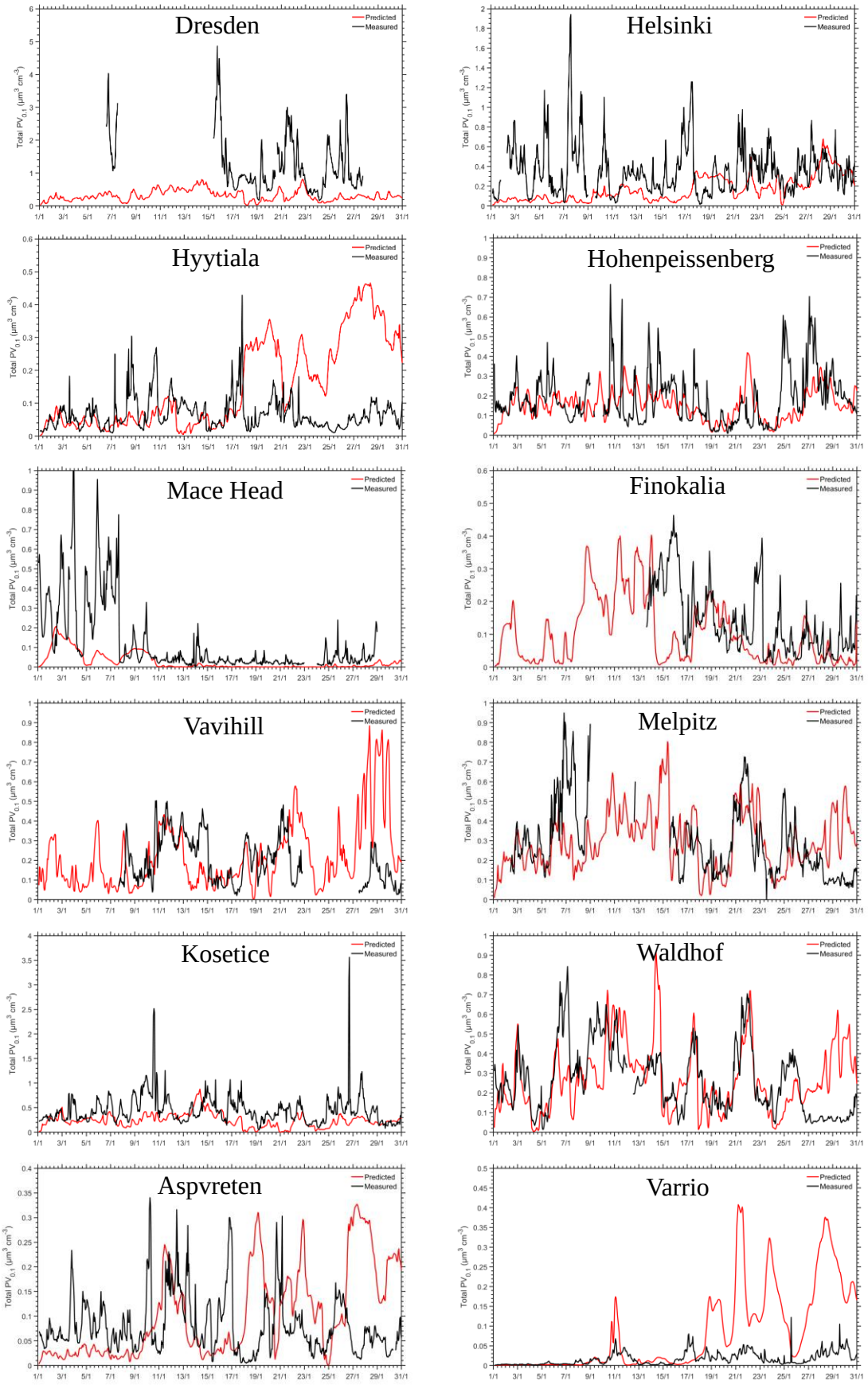

Figure S4. Timeseries of predicted and measured total volume concentrations in μm^3 cm^{-3} for the period of 1-30 January 2009 in different sites.

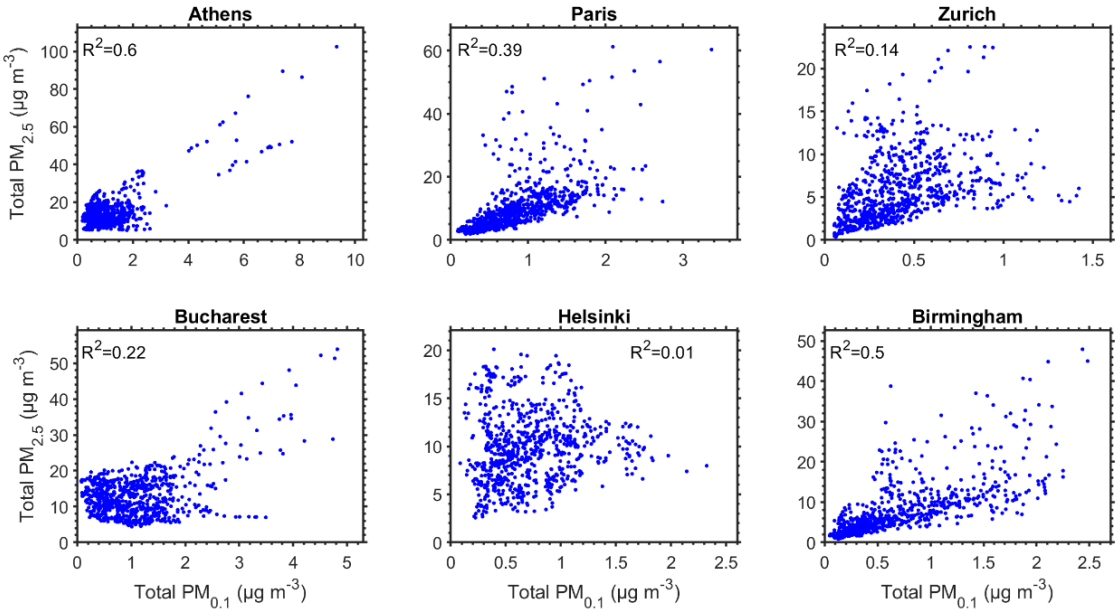

Figure S5. Correlation plots for predicted $PM_{2.5}$ and $PM_{0.1}$ in major cities during the period of 5 June - 8 July 2012. R^2 values correspond to the square of the samples Pearson's correlation coefficient R.

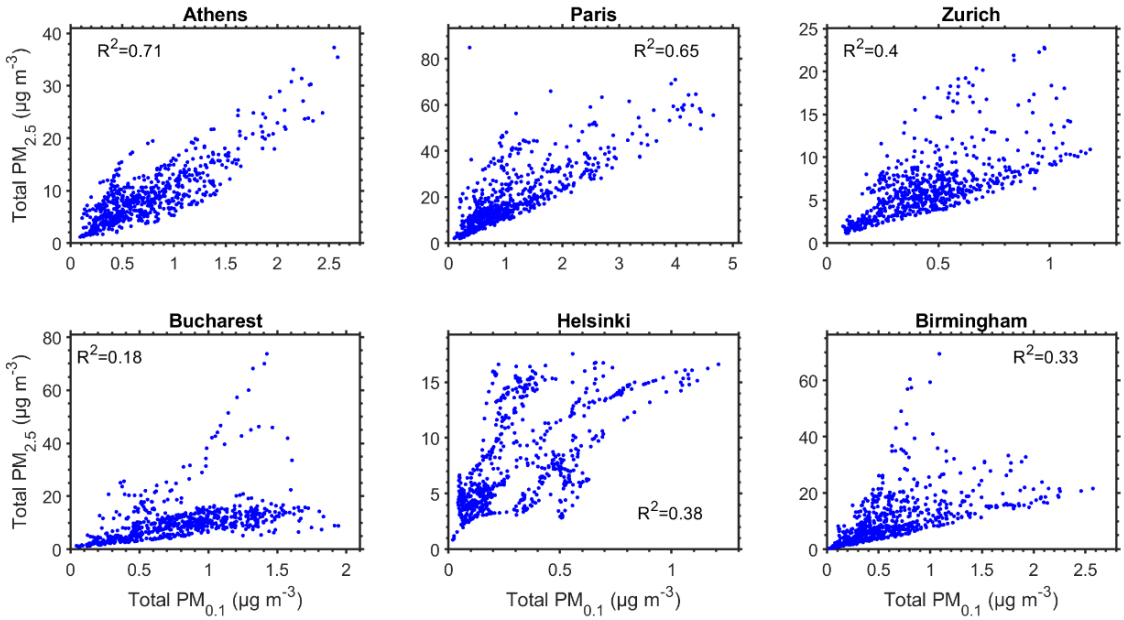

Figure S6. Correlation plots for predicted $PM_{2.5}$ and $PM_{0.1}$ in major cities during the period of 1-30 January 2009. R^2 values correspond to the square of the samples Pearson's correlation coefficient R.