

Supplementary material

Table S1. Discarded filters due to sampling and analysis problems, at the five sites from 11 September 2009 to 10 September 2010.

	URBAN	SUBURBAN	NORTH EAST RURAL	NORTH WEST RURAL	SOUTH RURAL
09/2009	15, 16	-	20-23	-	17
10/2009	7	9	9	9	7, 9-15
11/2009	7	-	-	-	-
12/2009	16, 17, 18	-	30, 31	-	-
01/2010	07, 11, 12, 28	-	01-08, 11, 20-27	-	7
02/2010	19, 25, 28	16, 25	11, 12, 25, 28	11, 12, 25	25
03/2010	27, 28	-	1, 2, 5	-	-
04/2010	03, 04, 05, 11	-	-	-	-
05/2010	19, 20	-	-	-	-
06/2010	09, 17, 18	9	9	9, 25	9
07/2010	16, 17, 18, 19	-	5, 6, 7	-	27
08/2010	7	8-18, 24, 25	-	-	12
09/2010	-	-	-	-	-
Total (days)	30	17	35	6	14

Legend: e.g. during October 2009, at the South Rural station the 7th and all the days from the 9th to the 15th were discarded.

Note: Number of blank filters discarded: PTFE=0, QMA=8.

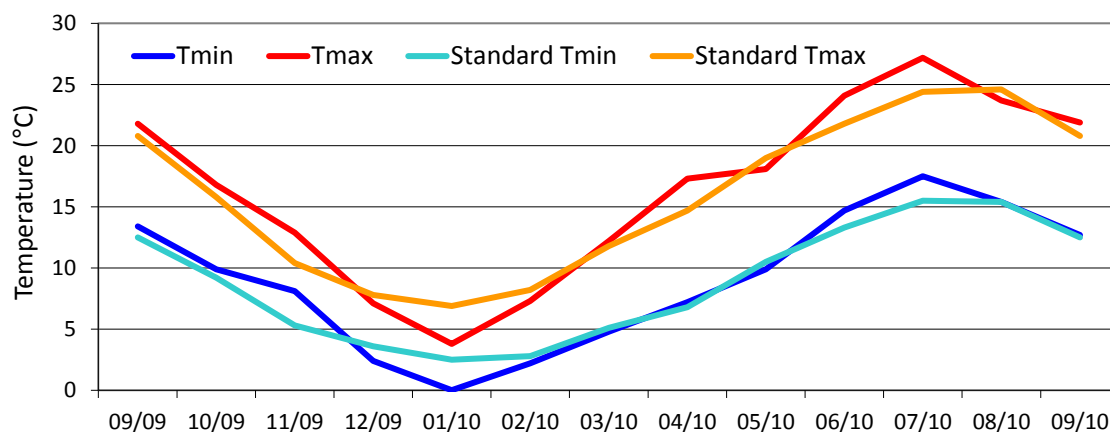
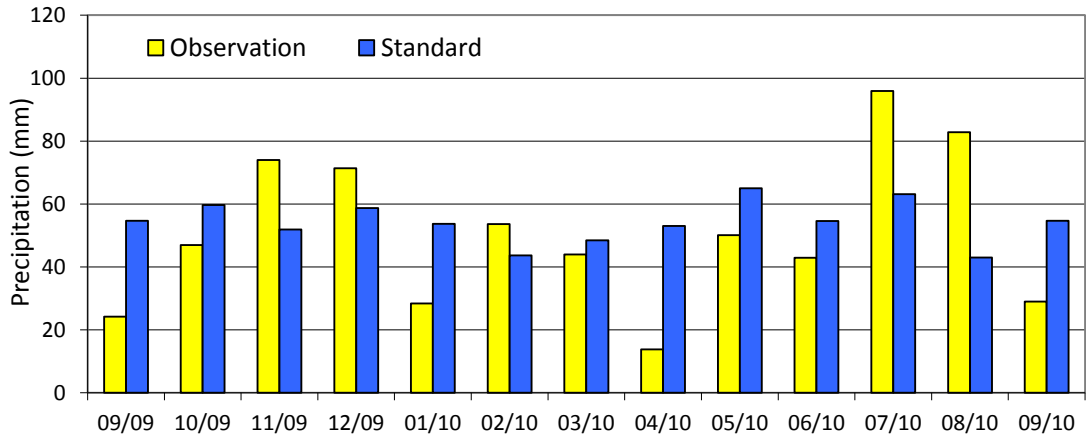
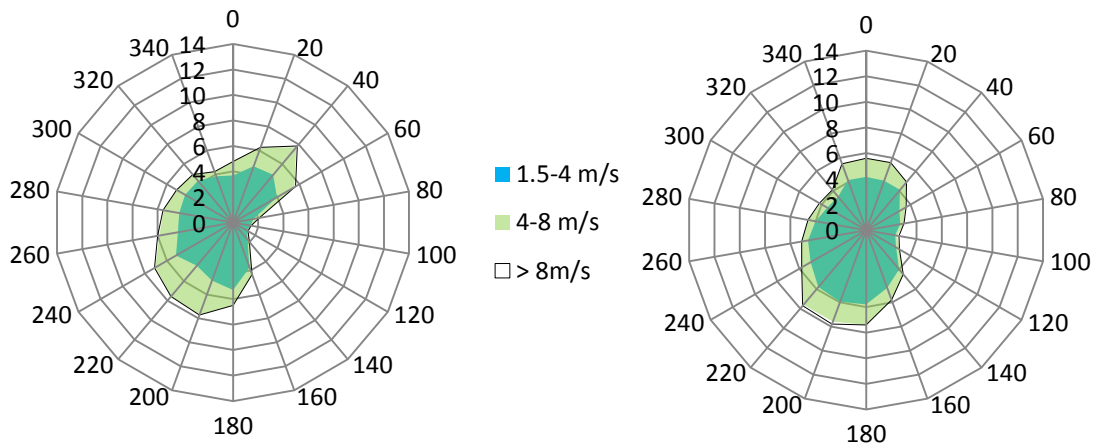


Fig. S1a. Comparison between observed (Tmin and Tmax) and standard temperatures (Standard Tmin and Standard Tmax) determined by the French institute of meteorology Meteo-France.

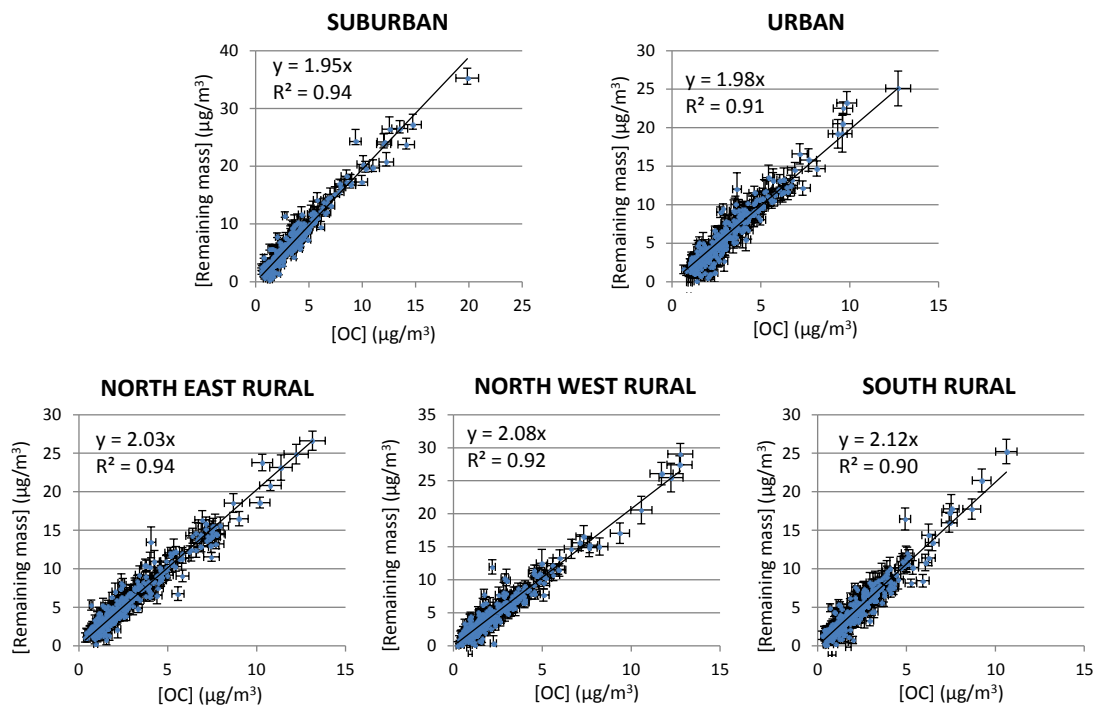


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2 Fig. S1b. Comparison between observed and standard precipitations determined by Meteo-
3 France.



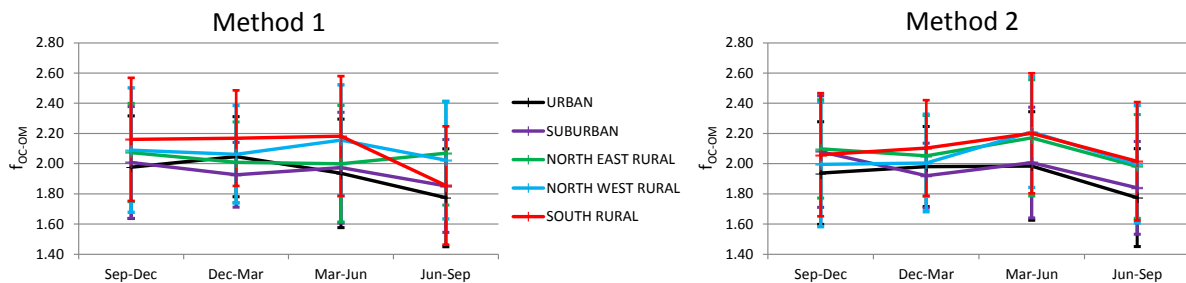
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5 Fig. S1c. Comparison between wind directions measured at Paris (Montsouris) during the
6 campaign (left) and from 1981 to 2000 (right, Meteo-France data).

7
8 Fig. S1. Meteorological representativeness of the one-year campaign.



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2 Fig. S2. Comparison between “Remaining Mass” (defined in Eq. (7a)) and OC concentrations at the
3 five sites during the whole campaign.

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5
6 Fig. S3. Seasonal variations, at the five sites and during the whole campaign, of the OC to OM
7 conversion factor ($f_{\text{OC-OM}}$) using two different methods.

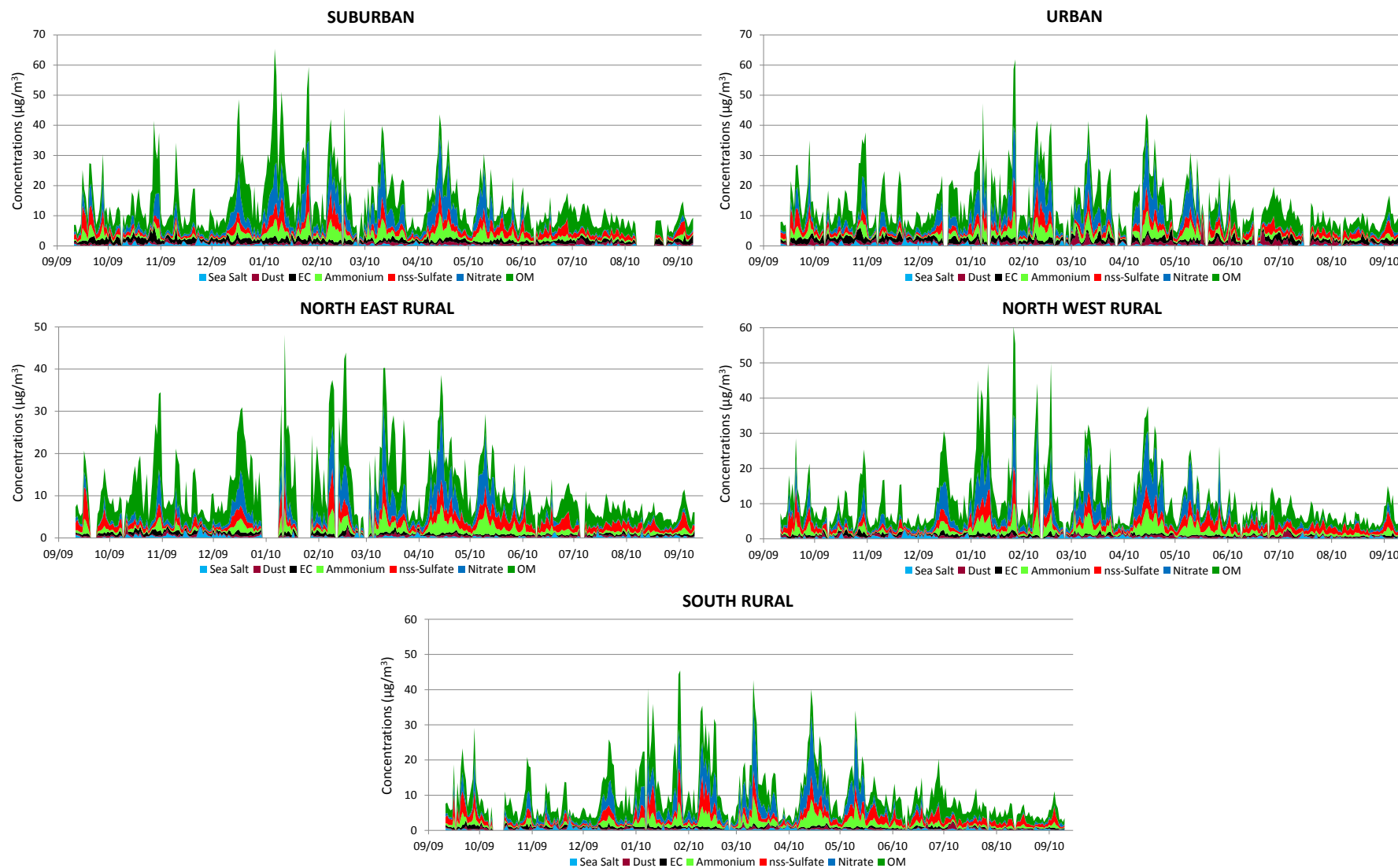
8 *Legend: Method 1: “Remaining Mass” concentrations as defined in Eq. (7) are plotted against*
9 *OC concentrations, $f_{\text{OC-OM}}$ is the slope of the linear regression.*

10 *Method 2: $f_{\text{OC-OM}}$ is calculated day by day from Eq. (6), values higher than 3 and lower*
11 *than 1 are excluded from the dataset.*

12 *Date: e.g. Sep-Dec means from 11 September 2009 to 10 December 2009.*

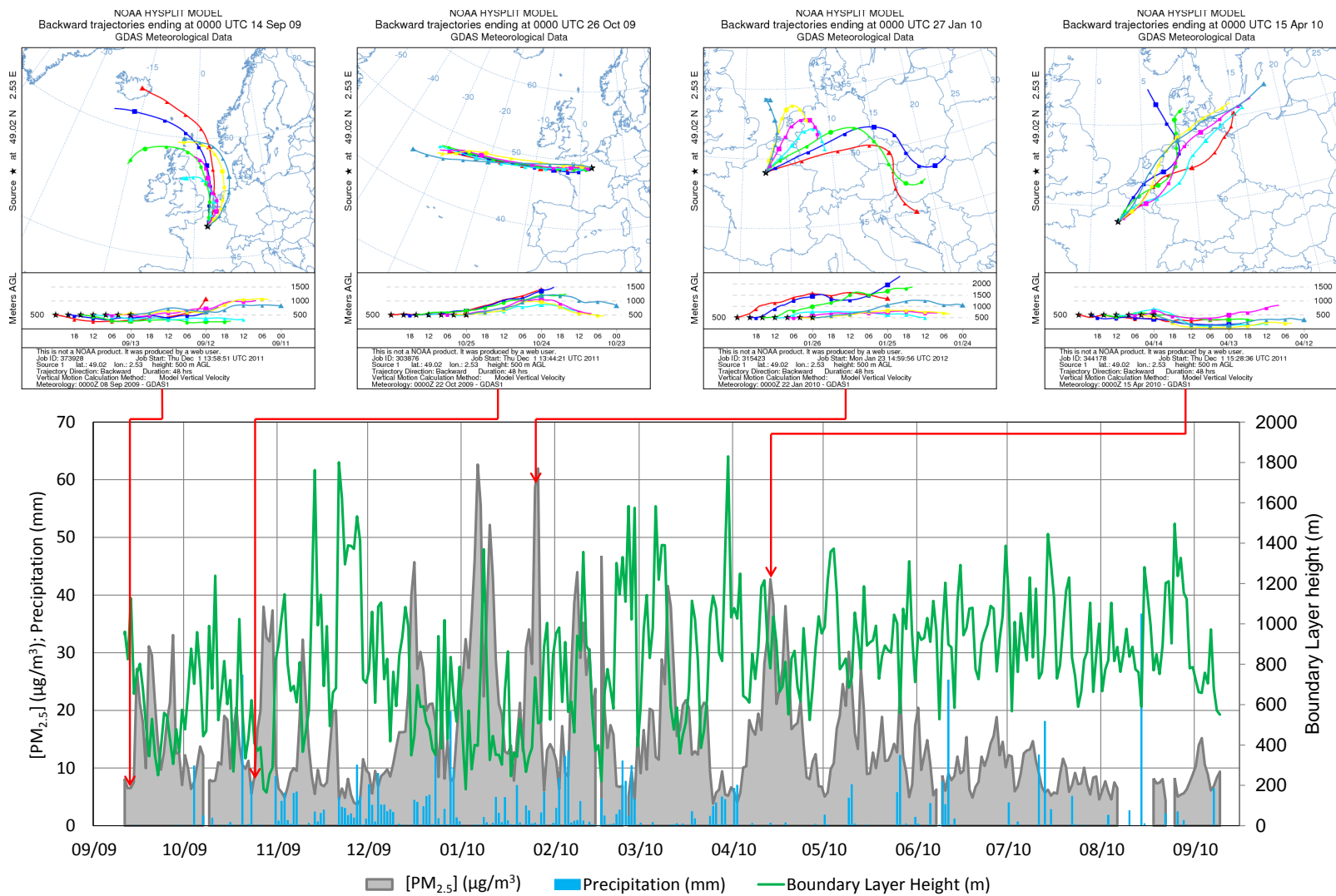
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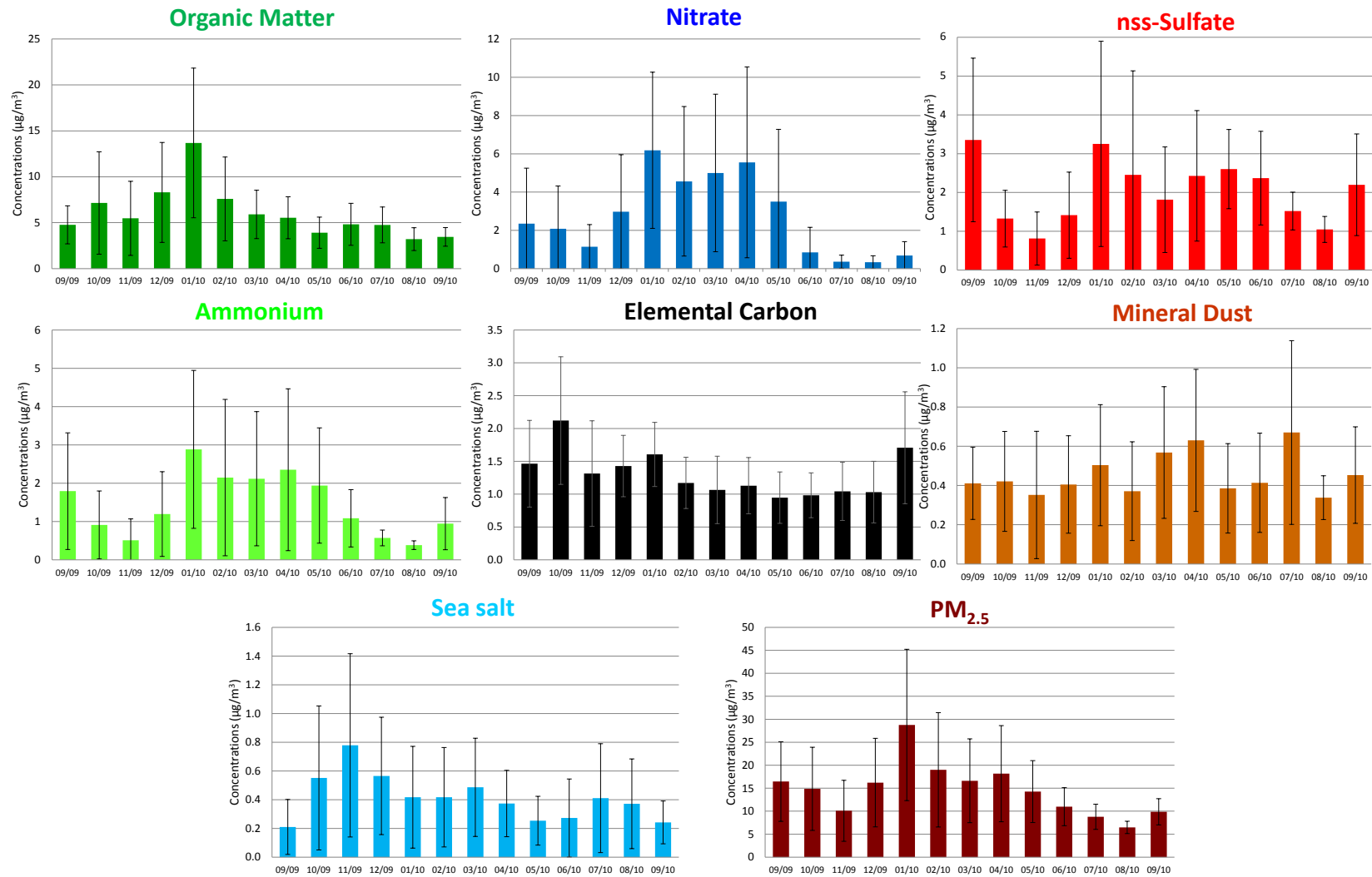
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2 Fig. S4. Daily chemical composition of fine aerosols at the five sites during the one-year project.



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2 Fig. S5. Influences of meteorological parameters on PM_{2.5} concentrations (µg/m³) at the suburban site during the whole campaign, comprising precipitations
3 (mm), boundary layer heights (m) and air mass trajectories.



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2 Fig. S6. Monthly mean concentrations ($\mu\text{g}/\text{m}^3$) of the major chemical components of $\text{PM}_{2.5}$ at the suburban site during the one-year period. Error bars
 3 represent one standard deviation ($\pm 1\sigma$).