Supplement for Factors controlling the concentration of water-soluble pyrogenic carbon in aerosols in Hokkaido, Japan

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Table S1: Information on sample collection

No.	Start date	End date	Air volume (m^3)
1	2022/9/19	2022/9/26	10148.4
2	2022/9/26	2022/10/3	10239.6
3	2022/10/3	2022/10/11	11541.2
4	2022/10/11	2022/10/18	10166.8
5	2022/10/18	2022/10/25	10070.4
6	2022/10/25	2022/11/1	10224
7	2022/11/1	2022/11/8	10184.5
8	2022/11/8	2022/11/15	10034.1
9	2022/11/15	2022/11/22	10229.4
10	2022/11/22	2022/11/29	10083.1
11	2022/11/29	2022/12/6	10066.9
12	2022/12/6	2022/12/15	12877
13	2022/12/15	2022/12/22	10323.7
14	2022/12/22	2022/12/29	10015.7
15	2022/12/29	2023/1/5	10214.4
16	2023/1/5	2023/1/12	10143.4
17	2023/1/12	2023/1/19	10102.3
18	2023/1/19	2023/1/27	10898.9
19	2023/1/27	2023/2/2	9504.3
20	2023/2/2	2023/2/9	10014.4
21	2023/2/9	2023/2/16	10166.6
22	2023/2/16	2023/2/23	10173.7

No.	Start date	End date	Air volume (m^3)
23	2023/2/23	2023/3/2	9998.1
24	2023/3/2	2023/3/9	10245.2
25	2023/3/9	2023/3/16	10220.1
26	2023/3/16	2023/3/23	10117.1
27	2023/3/23	2023/3/30	10418.4
28	2023/3/30	2023/4/6	9955.8
29	2023/4/6	2023/4/12	8235.5
30 (dust)	2023/4/12	2023/4/13	1915.2
31	2023/4/13	2023/4/20	10118.5
32	2023/4/20	2023/4/27	10018.3
33	2023/4/27	2023/5/4	10341.1
34	2023/5/4	2023/5/11	10010.5
35	2023/5/11	2023/5/18	10066.4
36	2023/5/18	2023/5/25	10357.3
37	2023/5/25	2023/6/1	10050.6
38	2023/6/1	2023/6/8	10099.8
39	2023/6/8	2023/6/15	9978.8
40	2023/6/15	2023/6/22	10137.3
41	2023/6/22	2023/6/29	10236.6
42	2023/6/29	2023/7/6	10123.6
43	2023/7/6	2023/7/13	10373.1
44	2023/7/13	2023/7/20	10116.8
45	2023/7/20	2023/7/27	10175.2
46	2023/7/27	2023/8/3	5897.7
47	2023/8/3	2023/8/10	10189
48	2023/8/10	2023/8/17	4342.6
49	2023/8/17	2023/8/24	10148.3
50	2023/8/24	2023/8/31	4695.6
51	2023/8/31	2023/9/7	3273.8
52	2023/9/7	2023/9/14	10031.6
53	2023/9/14	2023/9/21	10296.3
54	2023/9/21	2023/9/28	10190.5

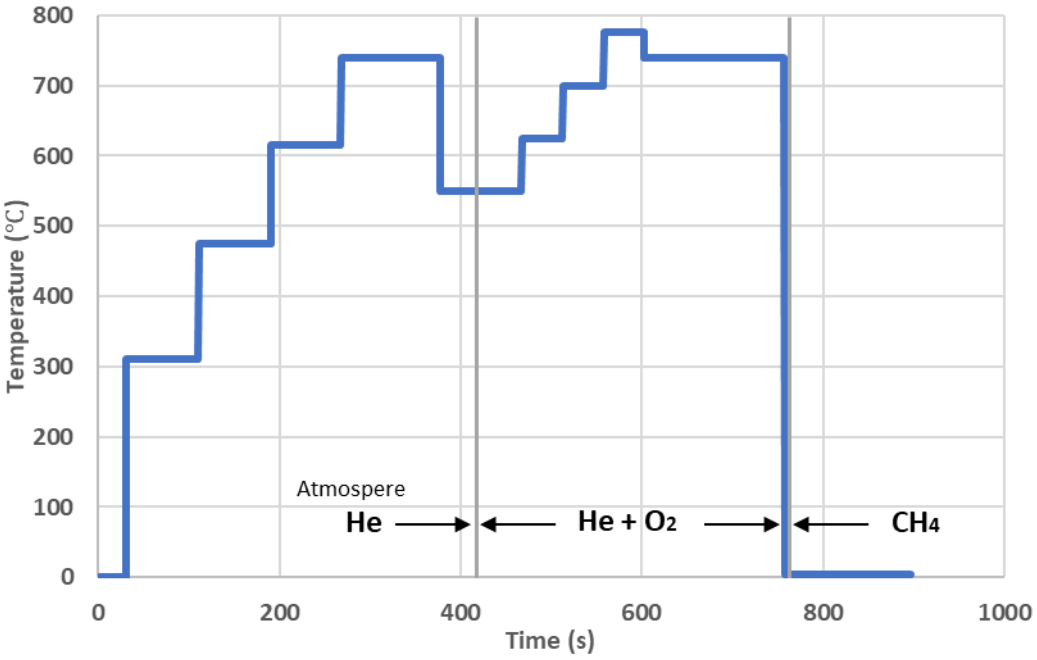

Figure S1: Temperature protocol and atmosphere during EC/OC analysis.

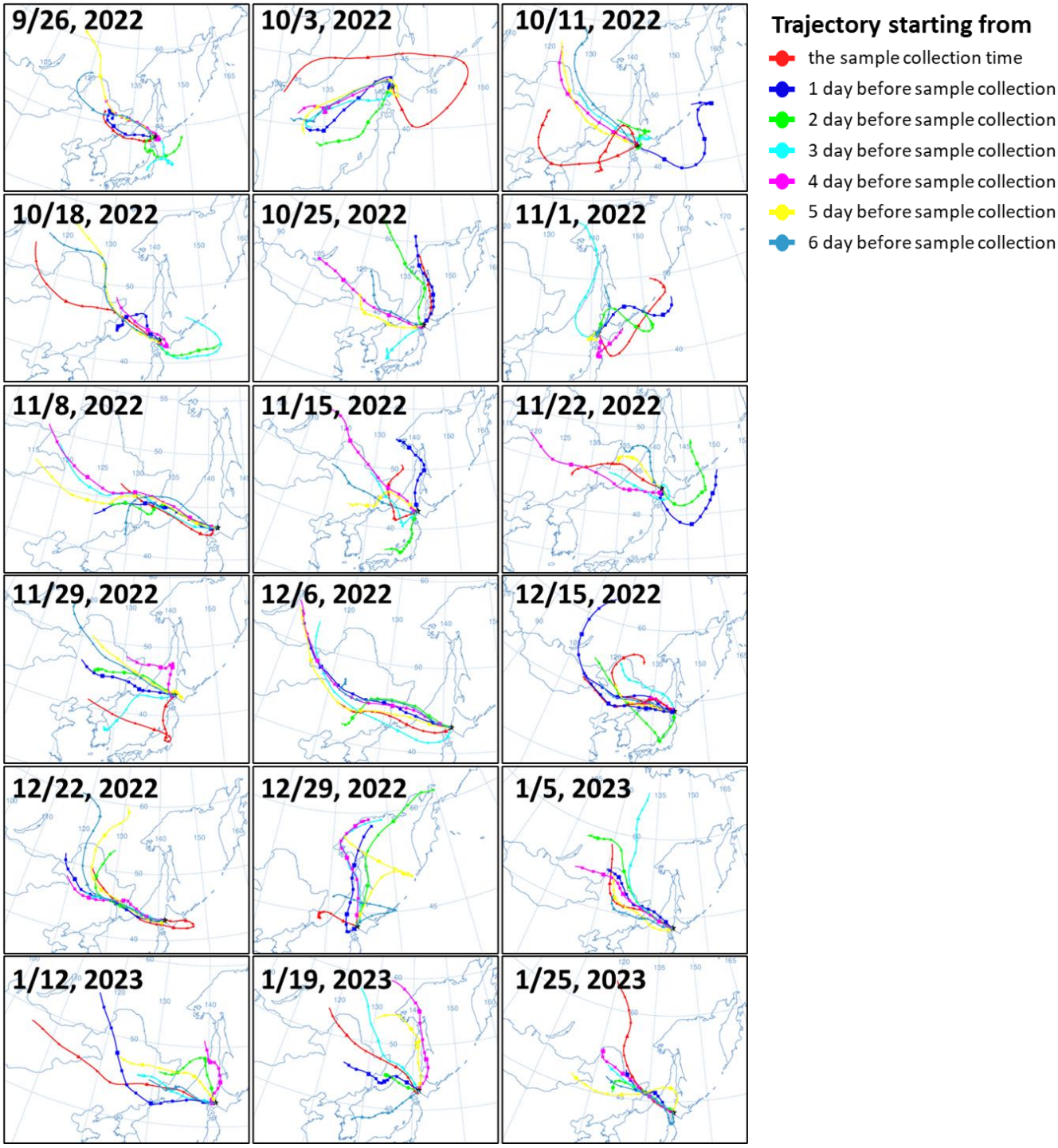

Figure S2: The 3-day back trajectories for all samples. The date on each panel represents the day the sample was collected. The colored lines indicate back trajectories starting every 24 hours from 6 days before the sample collection (every 3 hours from 15 hours before the sample collection for dust samples).

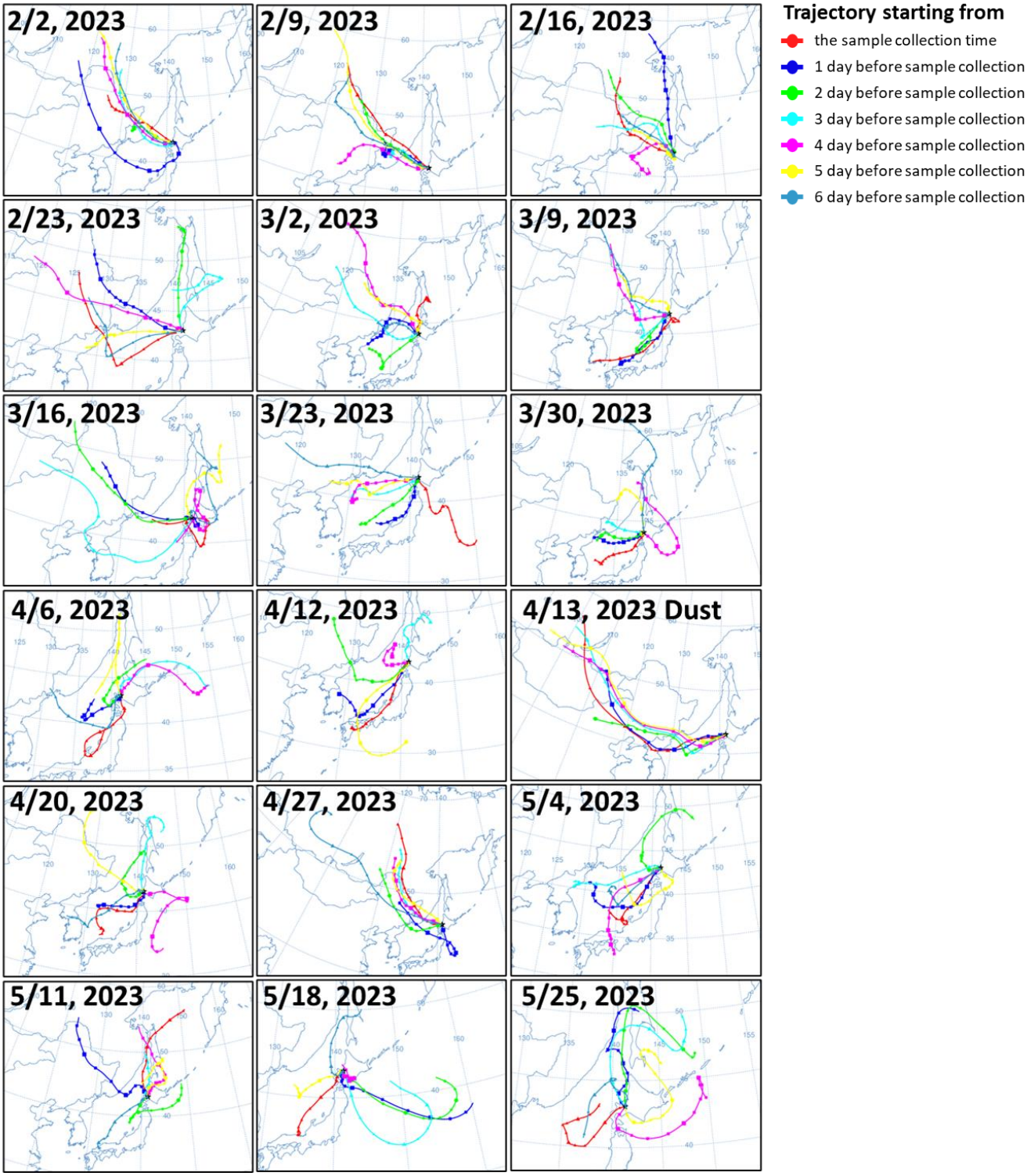

Figure S2: (Continued)

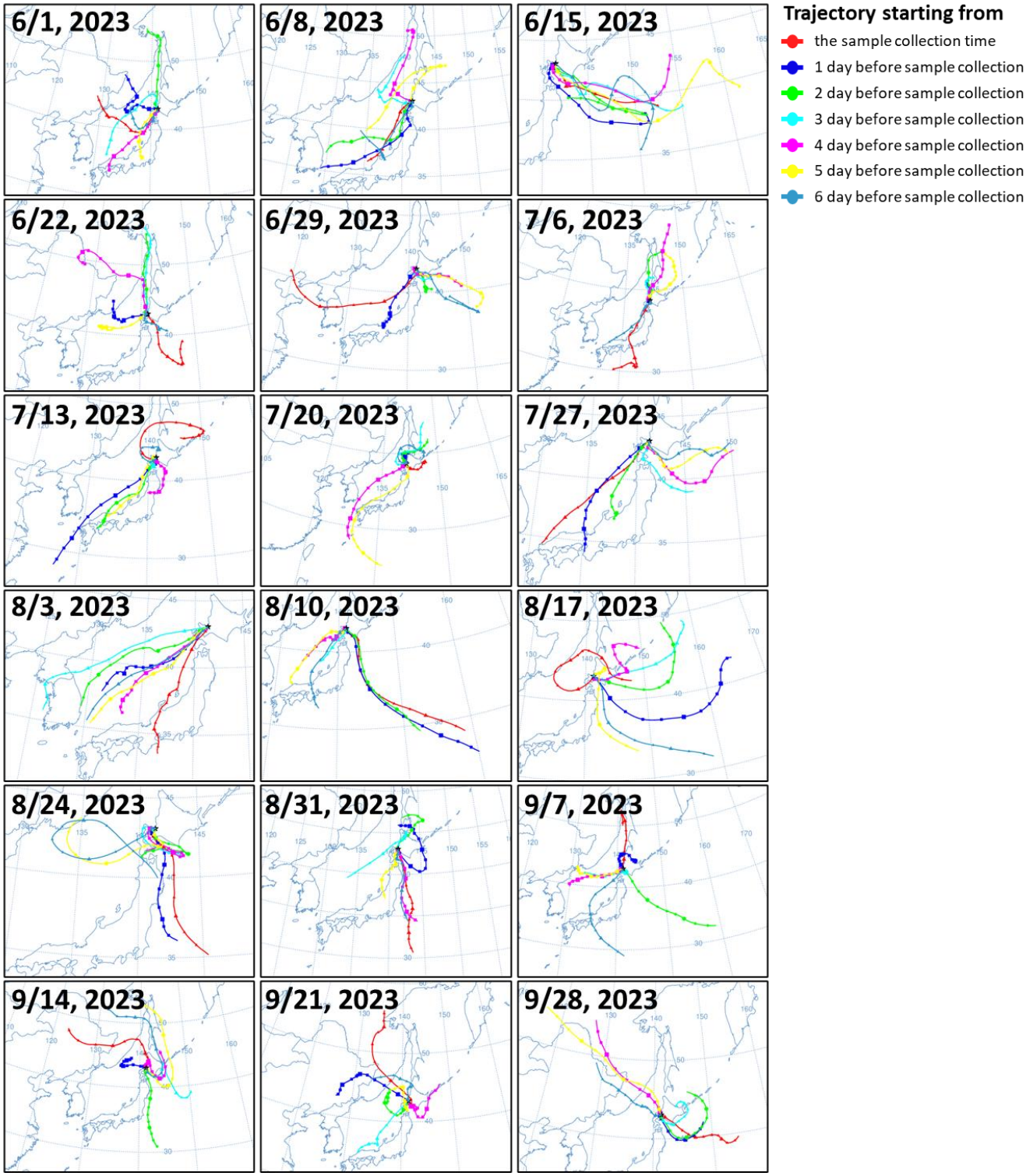

Figure S2: (Continued)

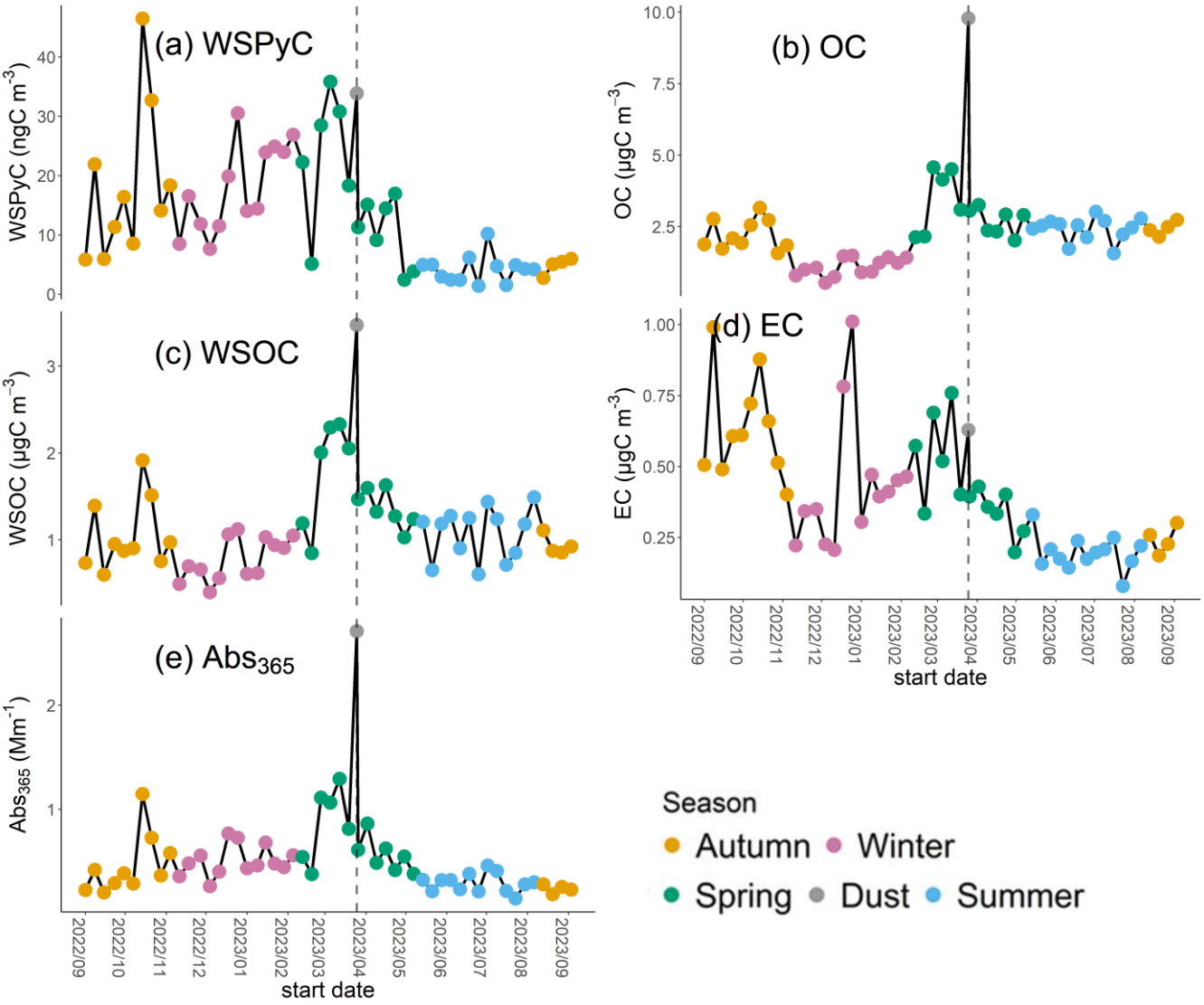

Figure S3: Temporal variations in concentration of (a) OC, (b) EC, (c) WSOC, (d) Abs$_{365}$, and (e) WSPyC. The dashed line represents the dust sample. The horizontal axis represents the sampling start date, with continuous sampling conducted until just before the next sampling.

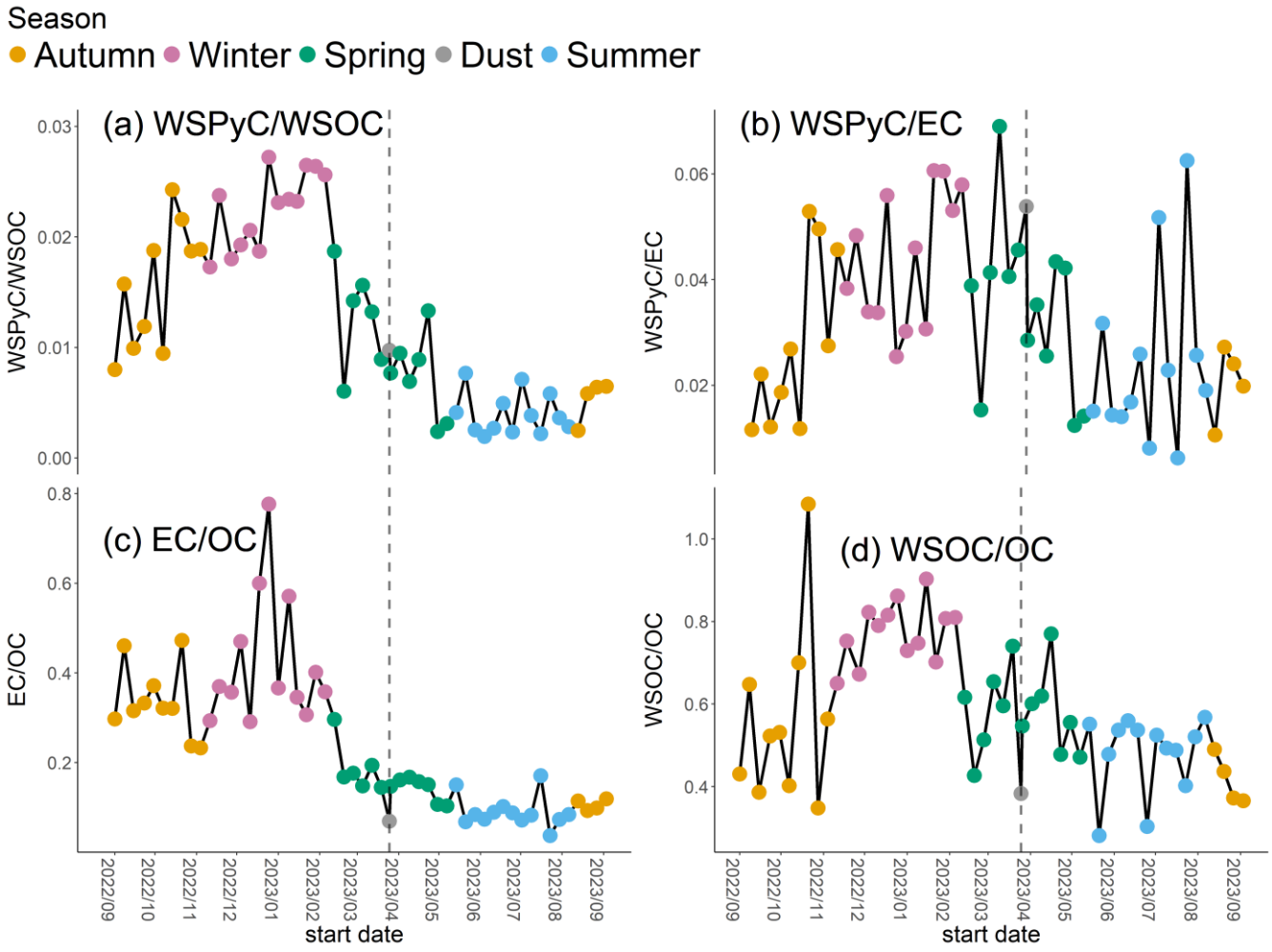

Figure S4: Temporal variations in ratio of (a) WSPyC/WSOC, (b) WSPyC/EC, (c) EC/OC and (d) WSOC/ OC. The dashed line represents the dust sample. The horizontal axis represents the sampling start date, with continuous sampling conducted until just before the next sampling.

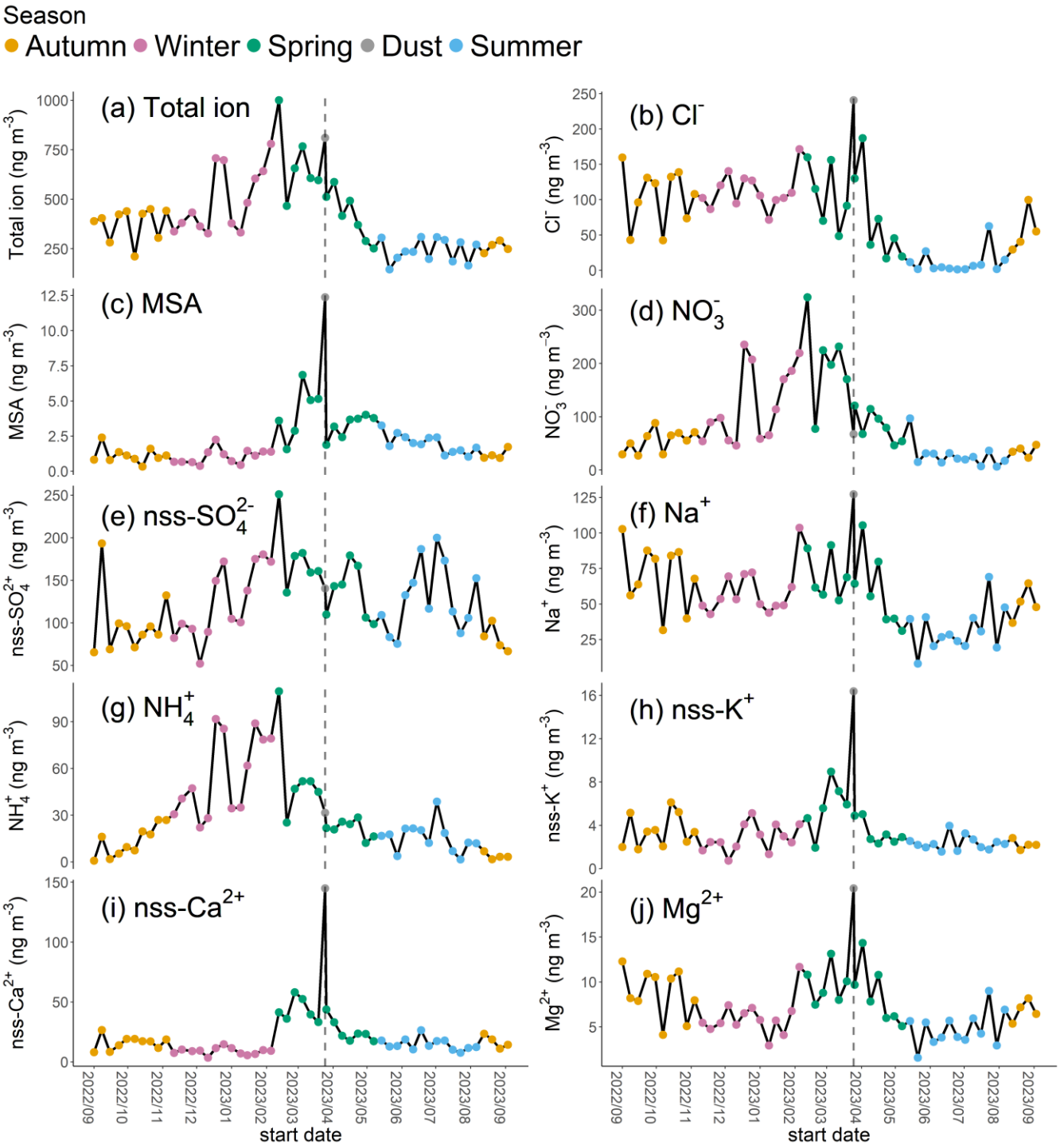

Figure S5: Temporal variations in concentration of (a) Total ion, (b) Cl^-, (c) MSA, (d) NO_3^-, (e) nss-$SO4_2^-$, (f) Na^+, (g) NH_4^+, (h) nss-K^+, (i) nss-Ca^{2+}, and (j) Mg^{2+}. The dashed line represents the dust sample. The horizontal axis represents the sampling start date, with continuous sampling conducted until just before the next sampling.