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Measurement report: Optical properties and sources of water-soluble brown carbon in Tianjin, North China – insights from organic molecular compositions

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Table S1. Concentrations of carbonaceous species and molecular markers in $PM_{2.5}$ in Tianjin.

	Winter			Summer		
	Day (*n*=41)	Night (*n* =43)	Average (*n*=84)	Day (*n*=30)	Night (*n*=30)	Average (*n*=60)
Carbonaceous species (μg m^{-3})						
WSOC	10.1±7.1	9.3±4.5	9.7±5.9	2.6±1.0	2.4±1.1	2.5±1.1
OC	23.7±15.7	24.0±11.0	23.9±13.4	4.0±1.3	3.6±1.5	3.8±1.4
EC	2.4±1.6	2.7±1.5	2.6±1.5	0.4±0.1	0.5±0.2	0.4±0.1
SOC	14.6±10.7	13.5±7.9	14.0±9.4	2.4±1.1	1.7±1.1	2.1±1.1
Molecular markers (ng m^{-3})						
levoglucosan	207±122	296±153	252±145	12.8±7.0	34.4±46.0	23.6±34.4
arabitol	3.9±3.1	4.8±3.2	4.4±3.2	1.8±1.7	1.9±2.0	1.9±1.8
glucose	13.8±5.8	13.6±6.5	13.7±6.1	6.5±2.5	7.0±7.5	6.8±5.6
trehalose	4.7±3.6	4.1±2.5	4.4±3.1	1.8±1.6	1.9±2.0	1.9±1.8
xylose	12.1±7.7	16.3±8.3	14.4±8.2	2.4±1.0	3.2±3.0	2.8±2.3
isoprene SOA tracers	5.4±3.4	5.4±3.0	5.4±3.2	29.6±22.3	25.3±23.6	27.4±22.9
monoterpene SOA tracers	13.2±7.4	14.1±6.2	13.6±6.8	23.4±13.6	22.4±23.7	22.9±19.2
sesquiterpene SOA tracer	12.2±10.2	12.6±9.9	12.4±10.0	2.0±1.8	2.2±4.5	2.1±3.4
DHOPA[a]	4.4±2.5	4.3±2.2	4.4±2.3	2.1±1.5	1.7±2.7	1.9±2.2
phthalic acids	66.6±39.8	74.1±35.3	70.4±37.5	18.5±9.5	18.5±21.3	18.5±16.4

[a] DHOPA: 2,3-dihydroxy-4-oxopentanoic acid.

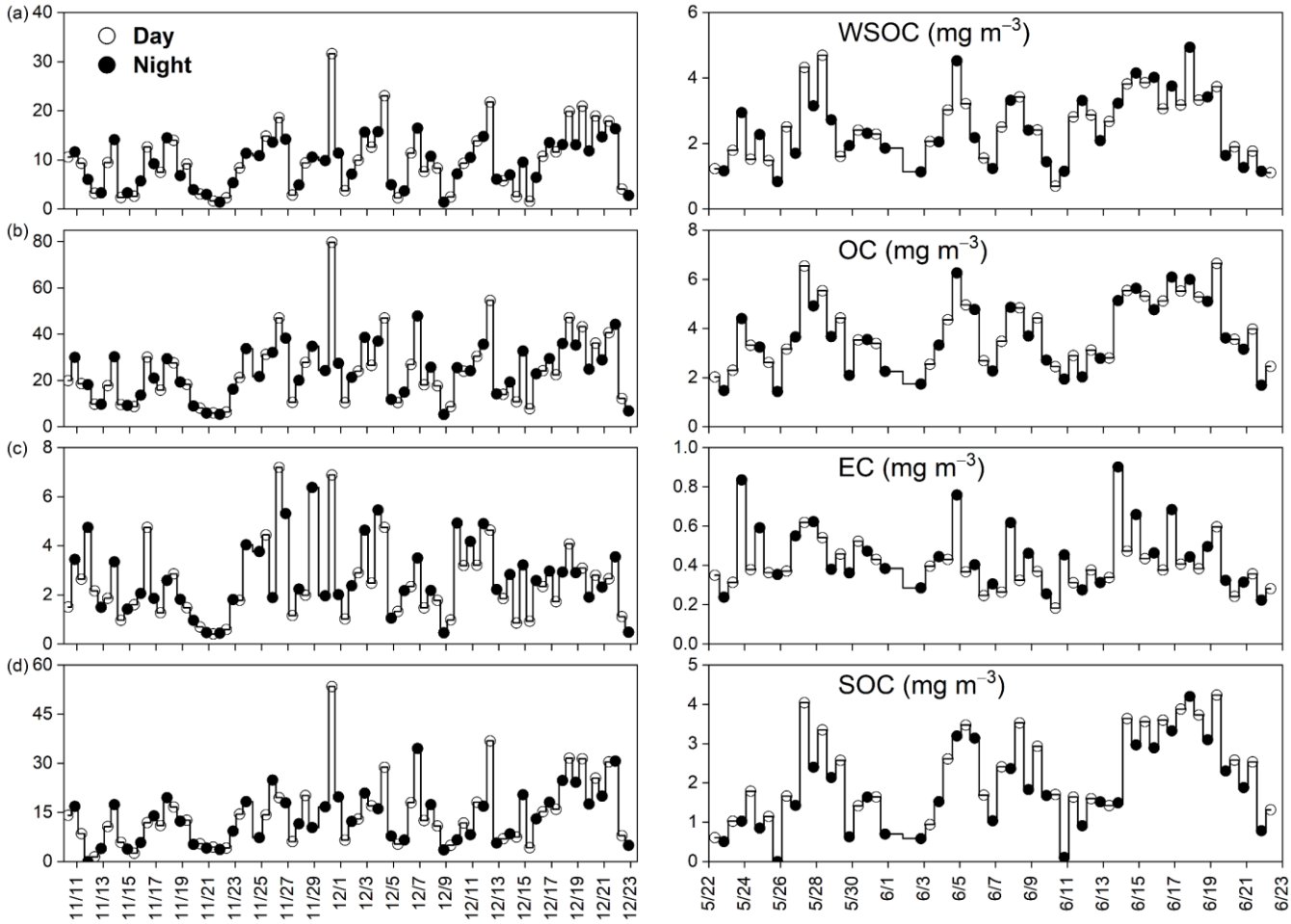
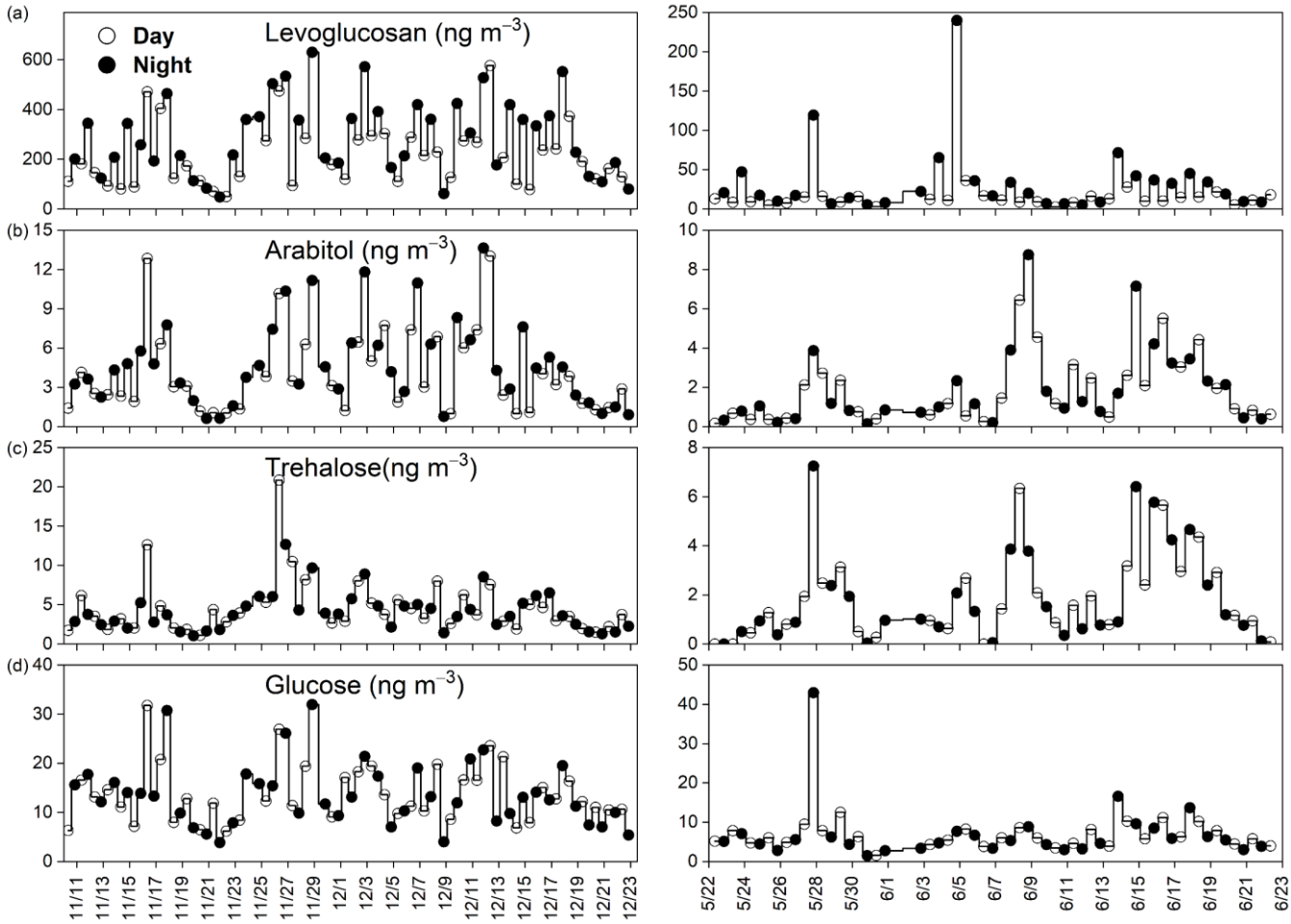


Figure S1. Temporal variations in concentrations of (a) WSOC, (b) OC, (c) EC, and (d) SOC in Tianjin.



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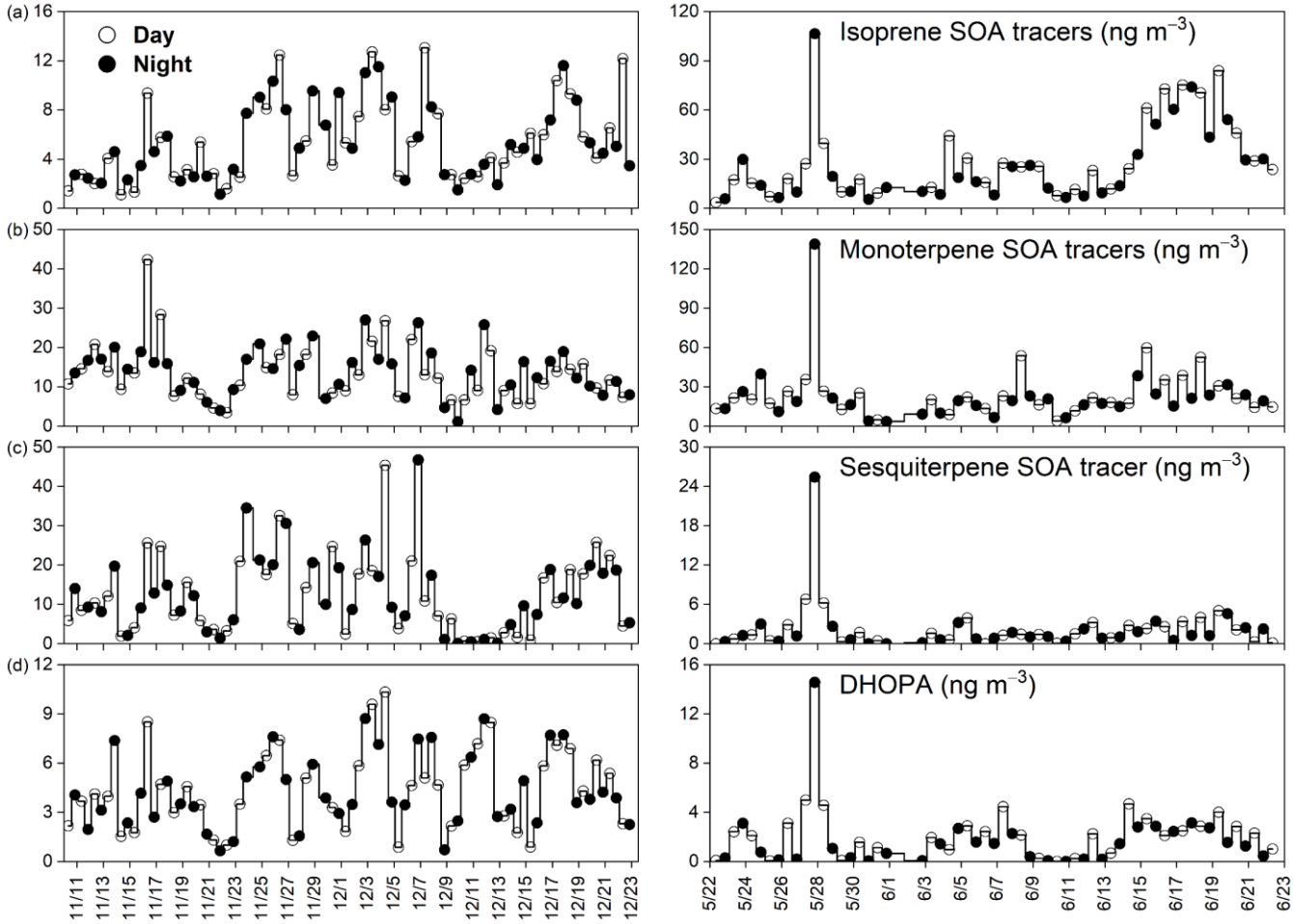

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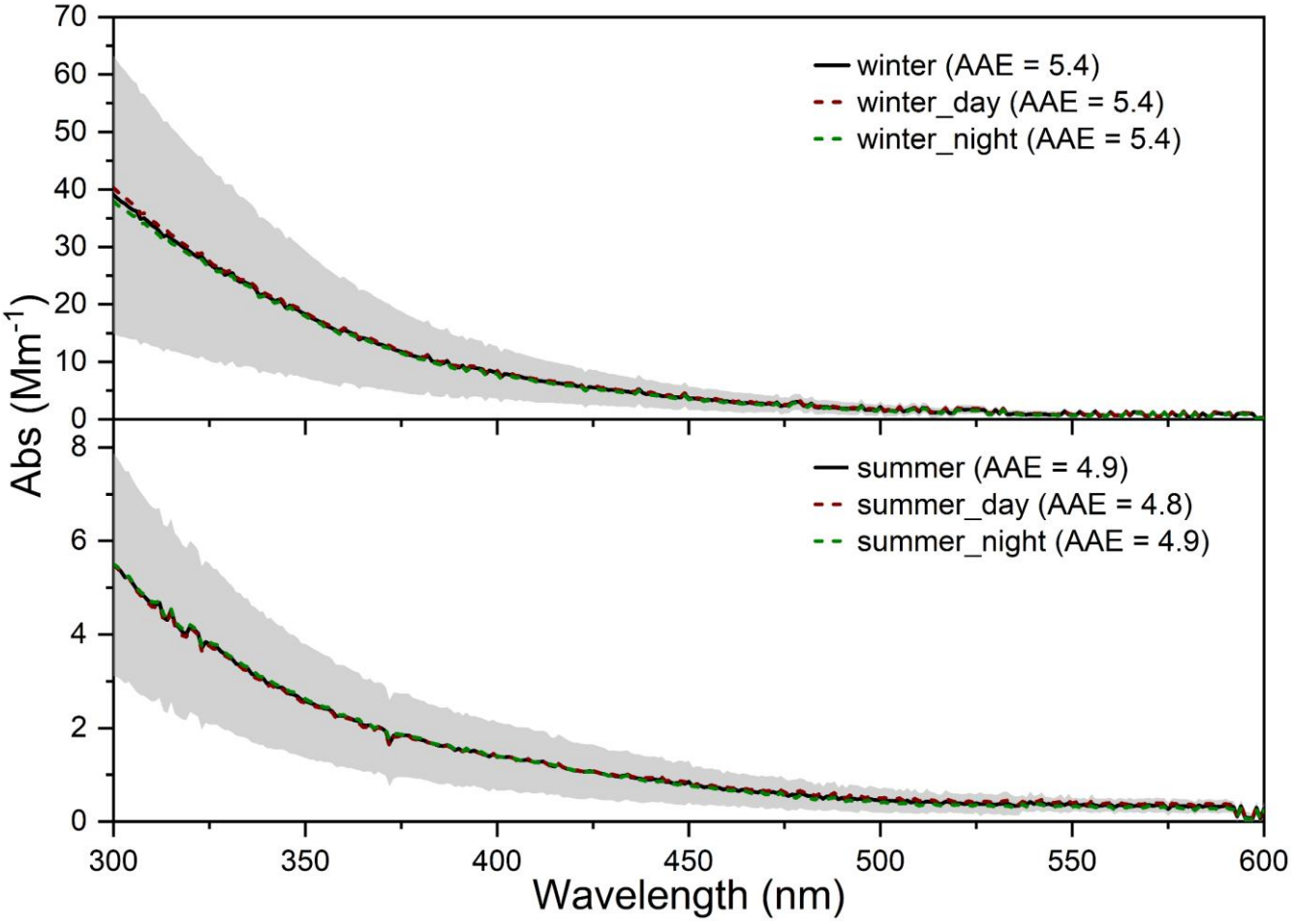

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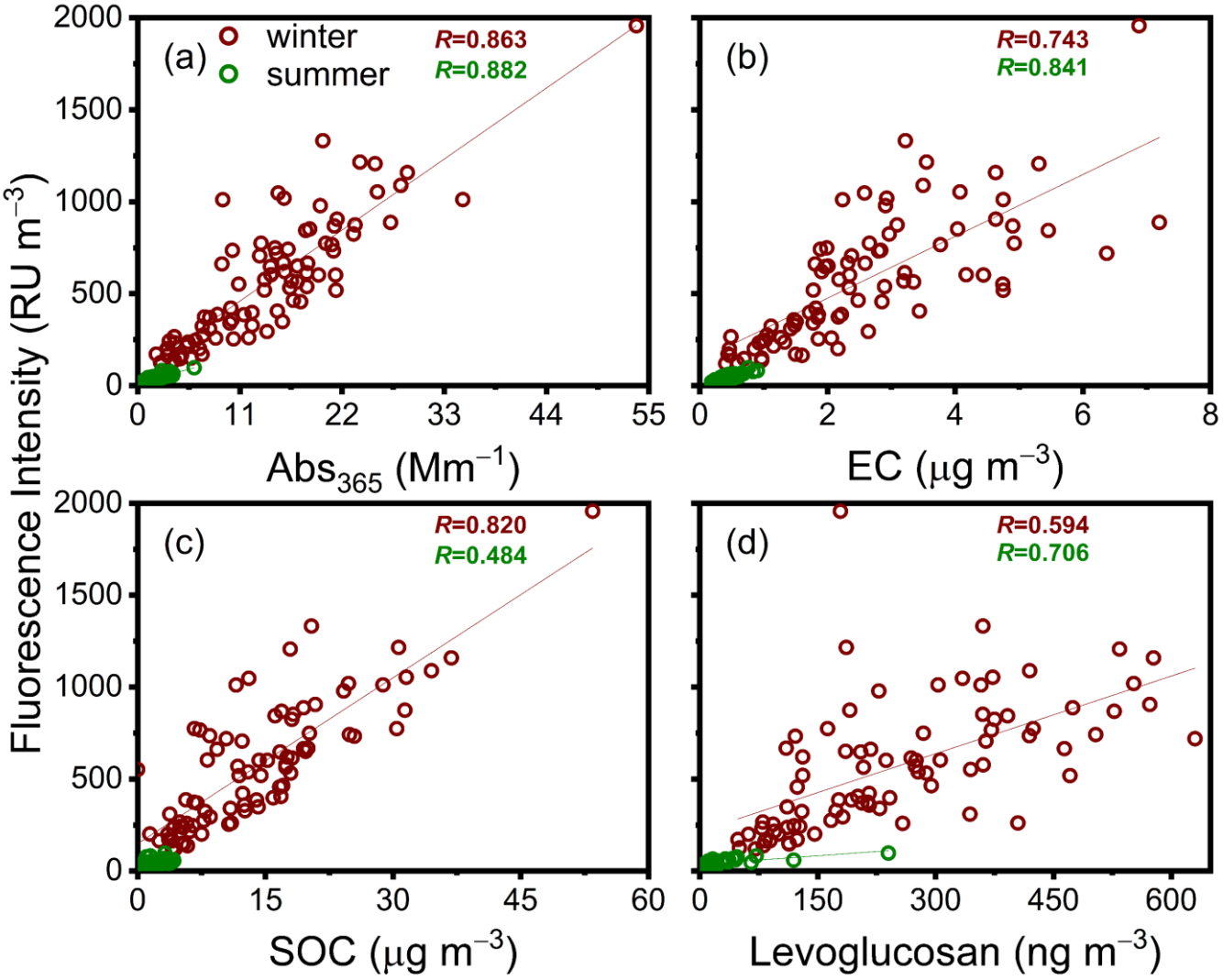

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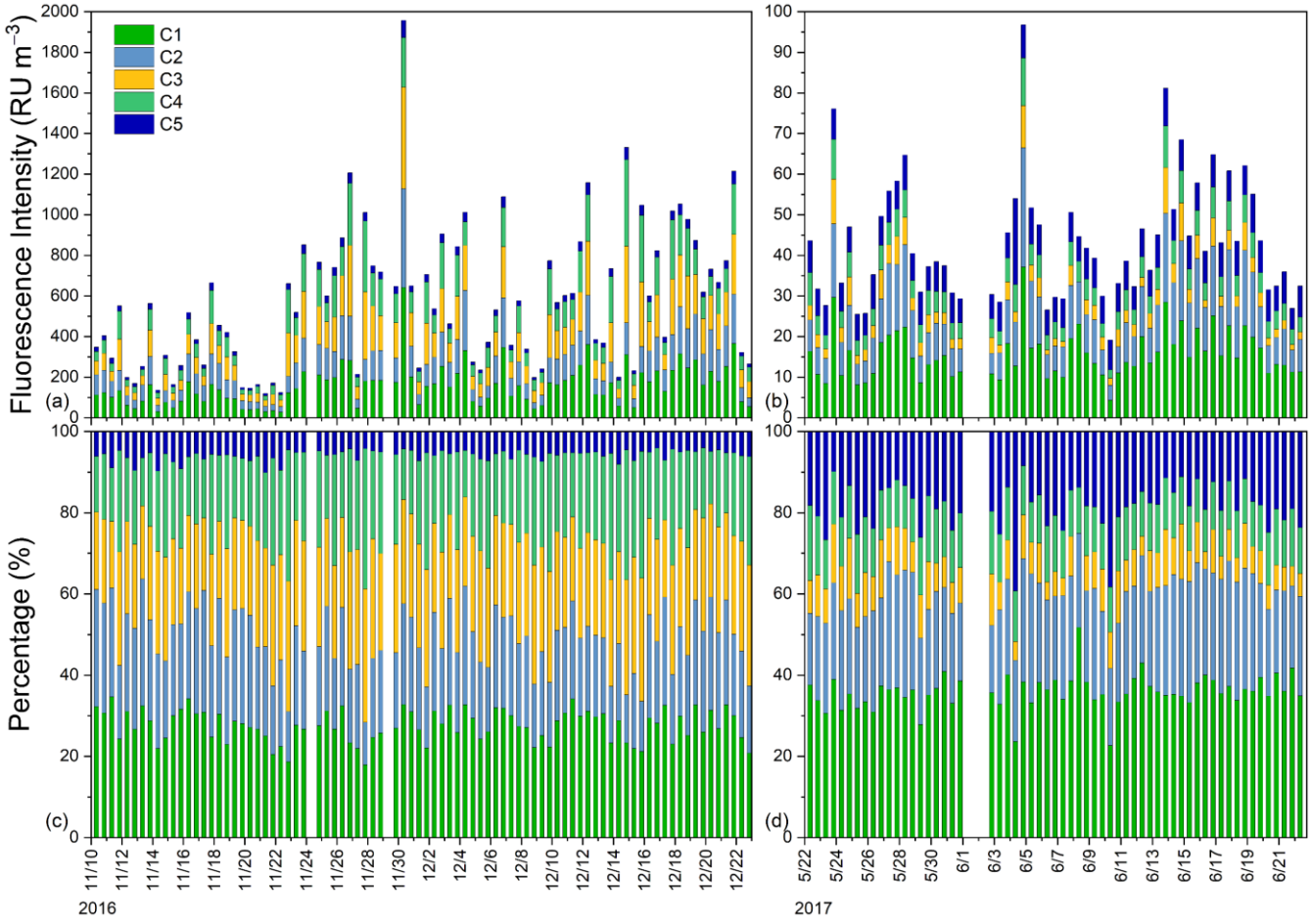

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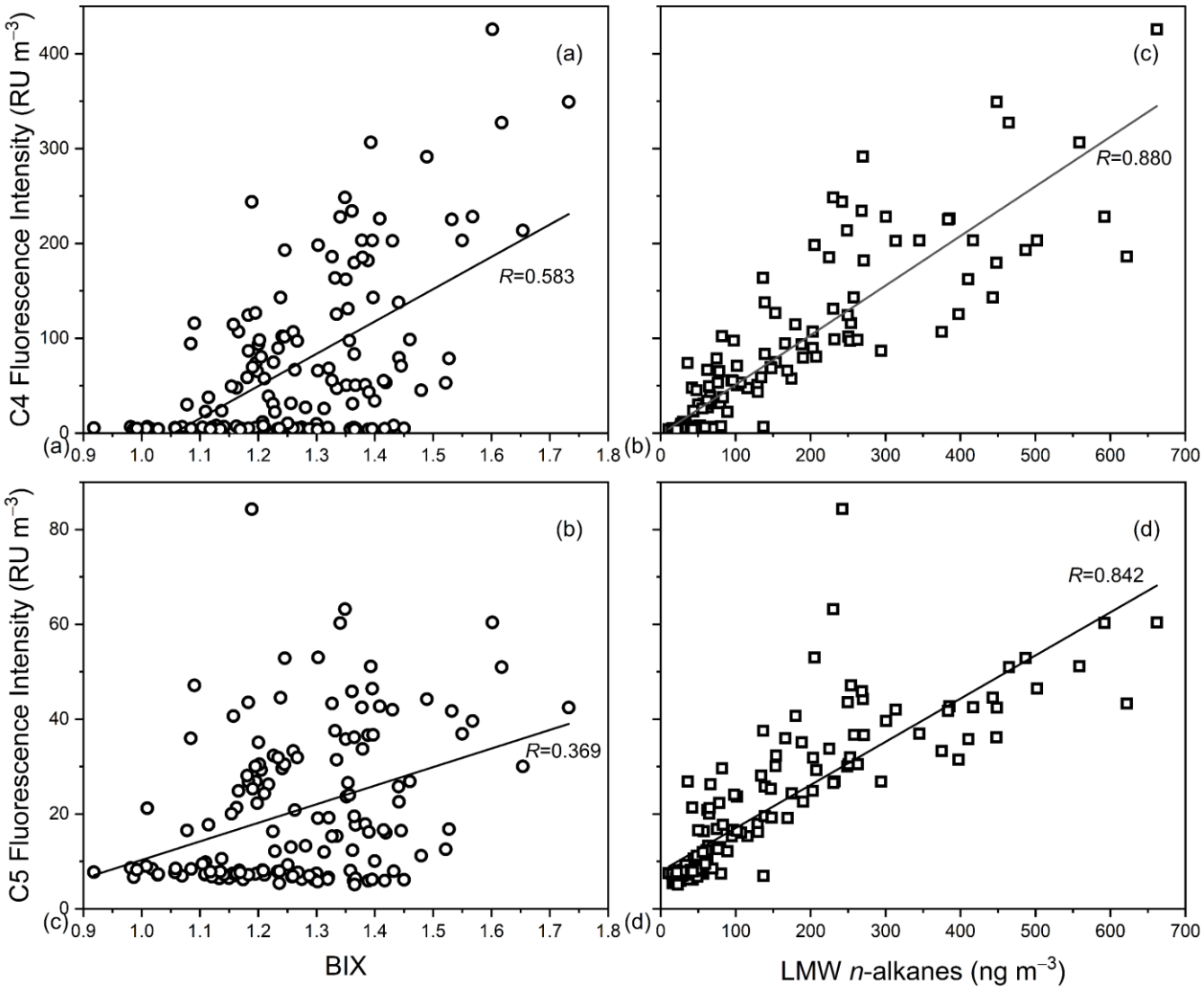

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