SUPPORTING INFORMATION for

Contribution of water soluble organic matter from multiple marine geographic eco-regions to aerosols around Antarctica

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Supplemental Information

7 pages, 2 Tables, 5 Figures

Table SI1. Atmospheric concentrations (and relative contributions) of the main aerosol components identified in this study in SI and OO PM1 aerosol samples.

	PM1	sea-salt ($\mu g\ m^{-3}$)	nssSO_4^{-2} ($\mu g\ m^{-3}$)	NH_4^+ ($\mu g\ m^{-3}$)	MSA ($\mu g\ m^{-3}$)	nmsa WSOM ($\mu g\ m^{-3}$)		sum amines ($ng\ m^{-3}$)	oxalate ($ng\ m^{-3}$)
SI	BI5	0.20±0.06	0.29±0.06	0.07±0.02	0.09±0.03	0.08±0.02		7.1±1.8	0.02±0.04
	HIVOL					0.19±0.05			
	Contrib. to aerosol mass (%)	24-27	35-40	8-10	11-12	11-22	Contrib. to WSOM (% of C)	5-8	<0.01
OO	BI5	2.4±2.4	0.10±0.01	0.03±0.005	0.04±0.01	0.17±0.02		1.5±0.8	0.85±0.05
	HIVOL					0.21±0.05			
	Contrib. to aerosol mass (%)	86-88	3-4	1-1	1-2	6-8	Contrib. to WSOM (% of C)	0.9-1	0.2-0.3

Table SI2. Atmospheric concentrations (and relative contributions) of the main aerosol components identified in this study in SI and OO PM10 aerosol samples. Note that high volume filter sampling was not available in the PM10 size range, therefore non-MSA-WSOM was measured only on the Berner impactor samples. Considering the discrepancy observed between the two sampling techniques, the quantification of non-MSA-WSOM in the PM10 size range has to be considered a lower estimate.

	PM10	sea-salt ($\mu g\ m^{-3}$)	nssSO_4^{-2} ($\mu g\ m^{-3}$)	NH_4^+ ($\mu g\ m^{-3}$)	MSA ($\mu g\ m^{-3}$)	nmsa WSOM ($\mu g\ m^{-3}$)		sum amines ($ng\ m^{-3}$)	oxalate ($ng\ m^{-3}$)
SI	BI5	2.2±0.8	0.32±0.04	0.08±0.02	0.10±0.03	0.11±0.07		9.1±4.5	0.2±0.1
	Hivol								
	Contrib. to aerosol mass (%)	78	11	3	4	4	Contrib. to WSOM (% of C)	9	0.1
OO	BI5	7.9±4.0	0.14±0.05	0.04±0.008	0.07±0.03	0.22±0.05		1.8±1.1	2.0±1.4
	Hivol								
	Contrib. to aerosol mass (%)	94	2	0.5	1	3	Contrib. to WSOM (% of C)	0.8	0.5

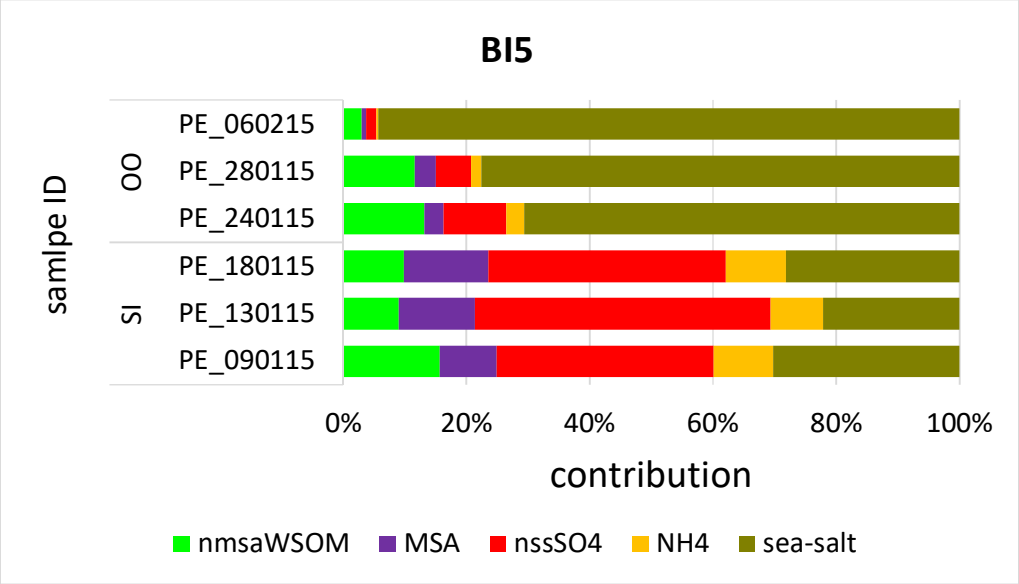

Figure SI1. Average of the PM_1 fraction of the 6 samples, considering WSOM as measured on the BI5 samples; nmsaWSOM stands for non-MSA-WSOM.

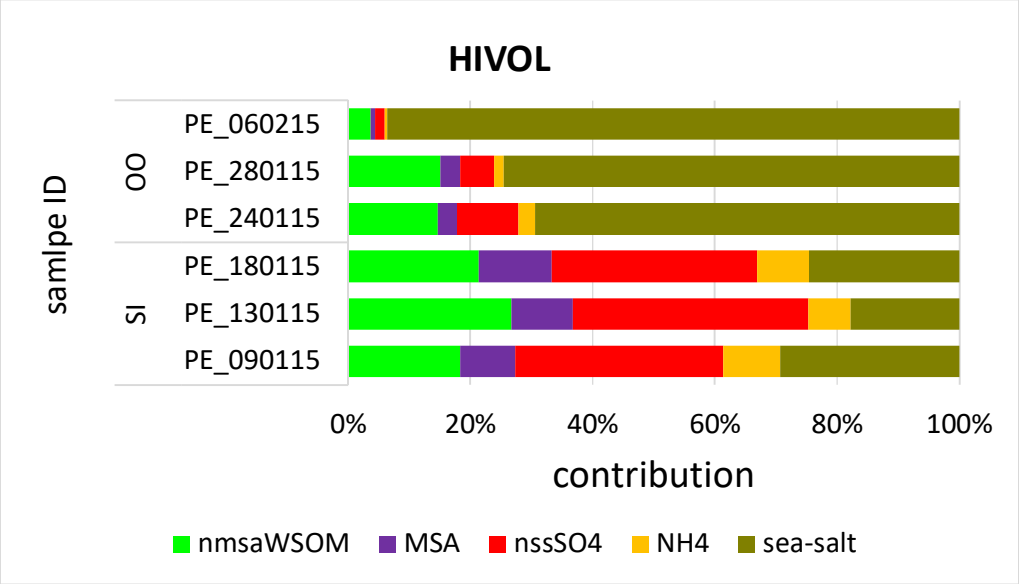

Figure SI2. Average of the PM_1 fraction of the 6 samples, considering WSOM as measured on the HIVOL samples; nmsaWSOM stands for non-MSA-WSOM.

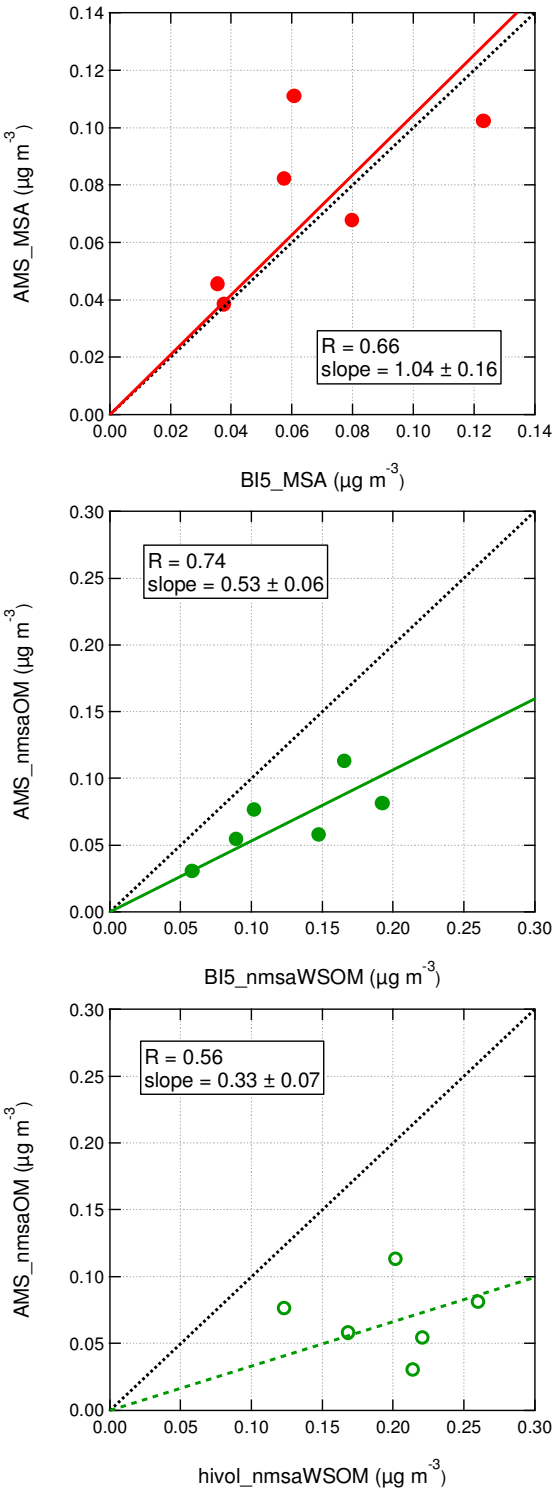

Figure SI3. Comparison of MSA and non-MSA-WSOM measured by offline and online techniques.

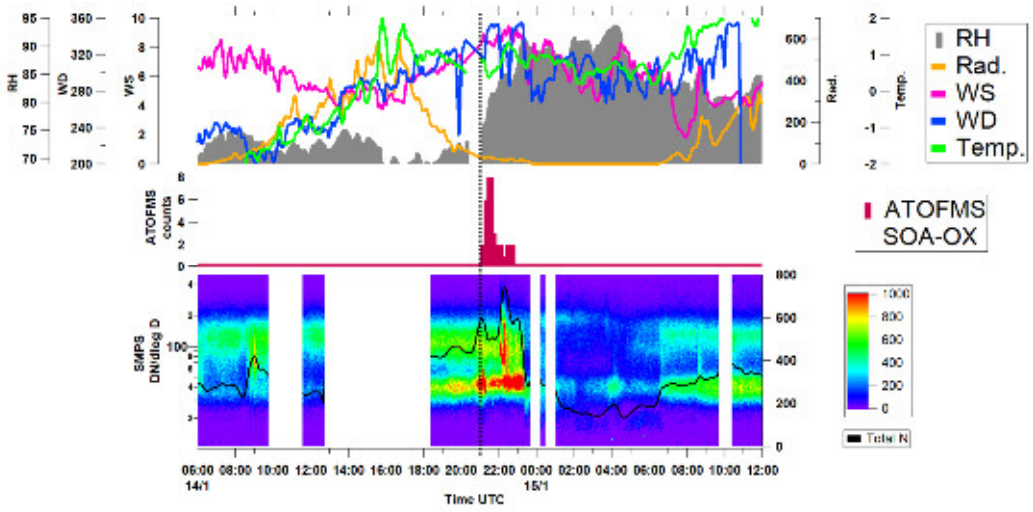

Figure SI4 Aerosol size distributions, meteorological data, and ATOFMS temporal trends for the case study event of day 14-15th January 2015.

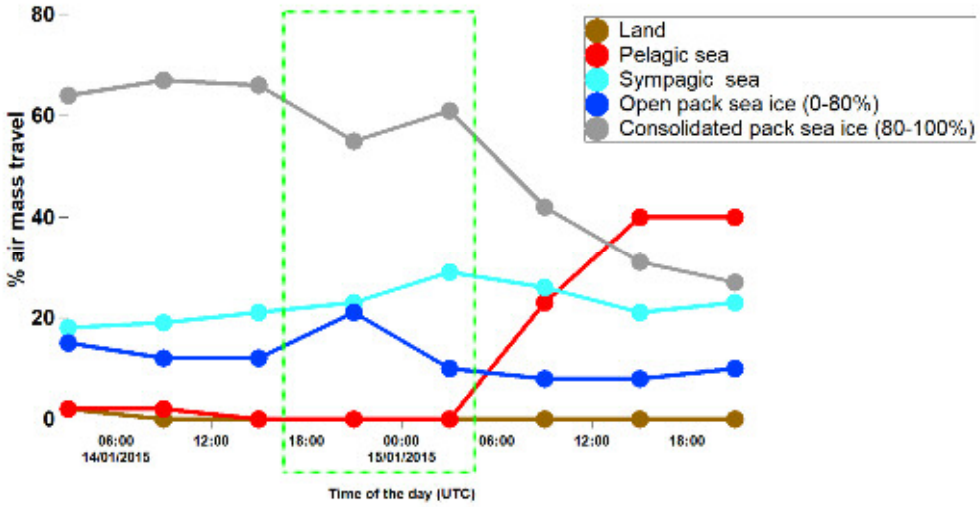

Figure SI5. Air mass categorization for the case study event of day 14-15th January 2015. In the green box the period of the event, air mass back trajectory analysis described in section 2 (methodology) of the main manuscript.