

Supplementary information

Linking Seawater Biogeochemistry to the Chemical and Biological Signatures of Nascent Marine Aerosol

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Supplementary figures

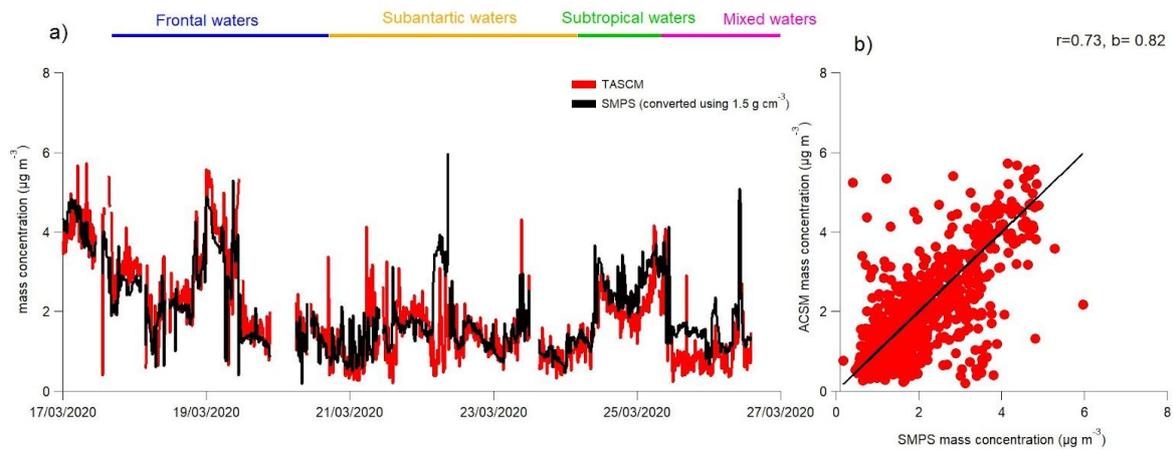


Figure S1 Time series of the total PM1 mass measured by the SMPS(black) and by the TACSM (red). b) A scatter plot illustrating the relationship between SMPS and NR-PM1 measured by the ACSM.

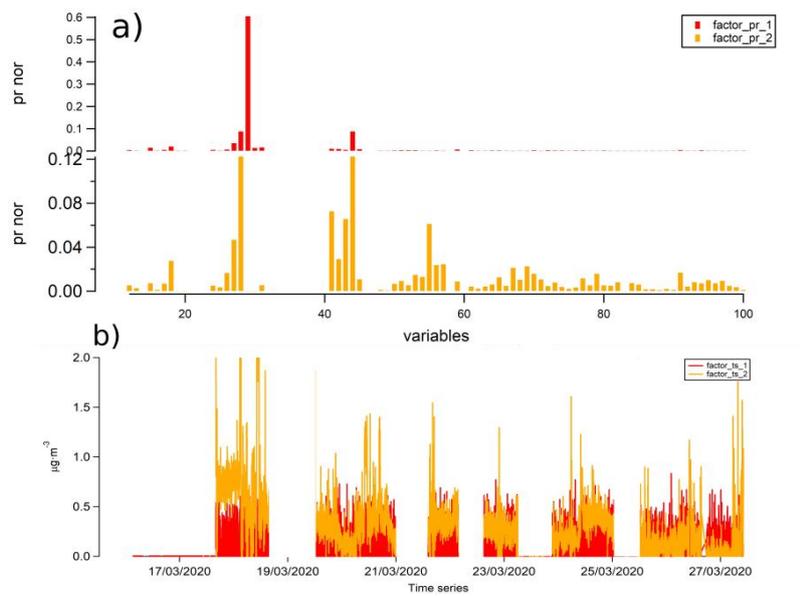


Figure S2: PMF a) time series and b) mass spectral profiles for a two factors solution.

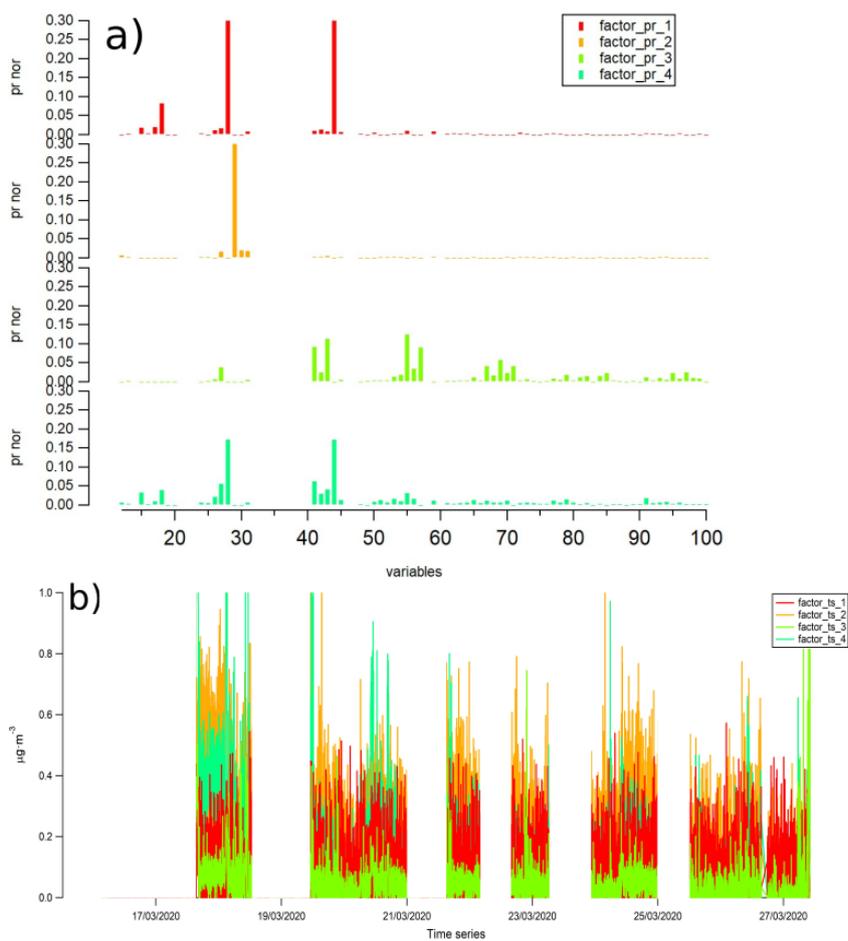


Figure S3: PMF a) time series and b) mass spectral profiles for a four factors solution.

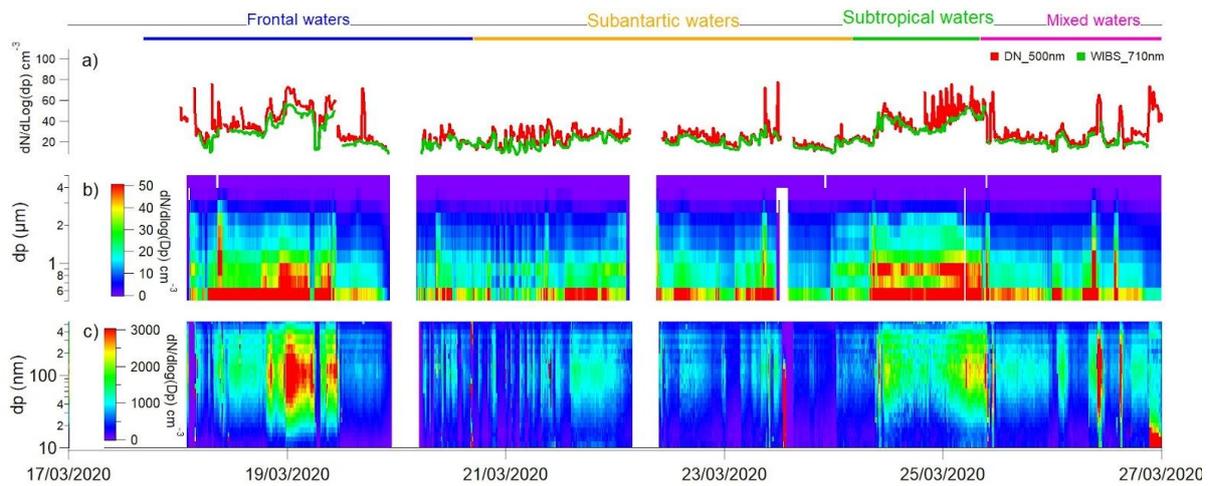


Figure S4: a) Comparison of overlapping size channels from the WIBS instrument (green) and the SMPS (Red) b) $dN/d\log(Dp)$ concentrations from the WIBS instrument and c) $dN/d\log(DP)$ concentrations from the SMPS

Figure S1: Comparison of the WIBS size channels at 564 nm and 710 nm with that of the SMPS size channel at 500 nm.

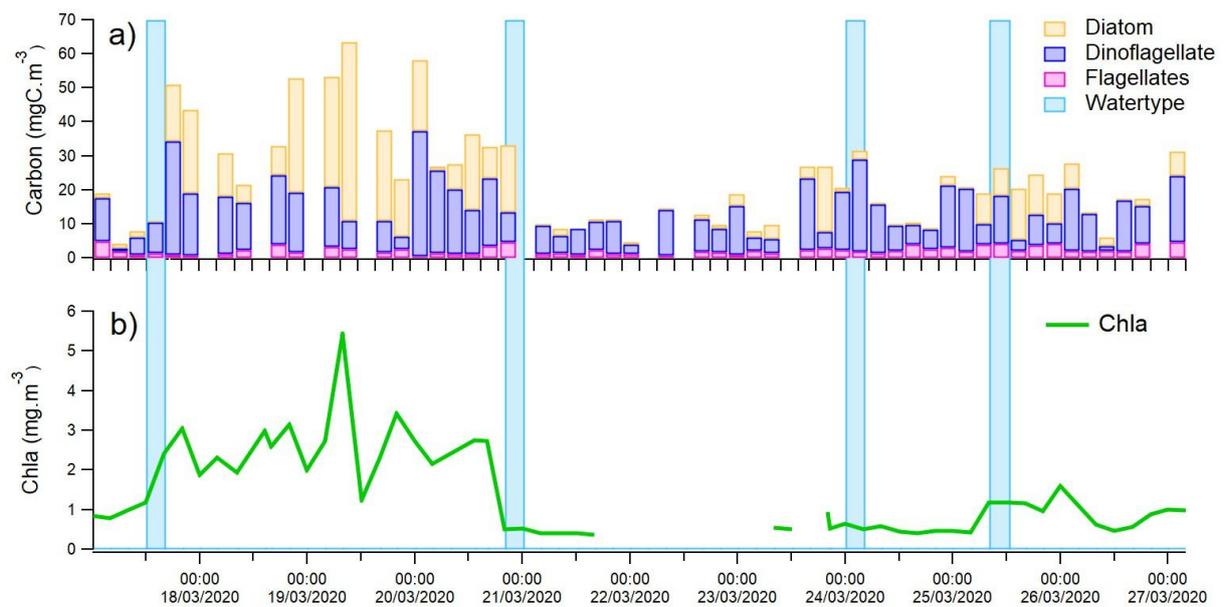


Figure S6: Time series of biological parameters of the SW a) Flagellates, diatoms and dinoflagellates, and b) Surface chlorophyll-a

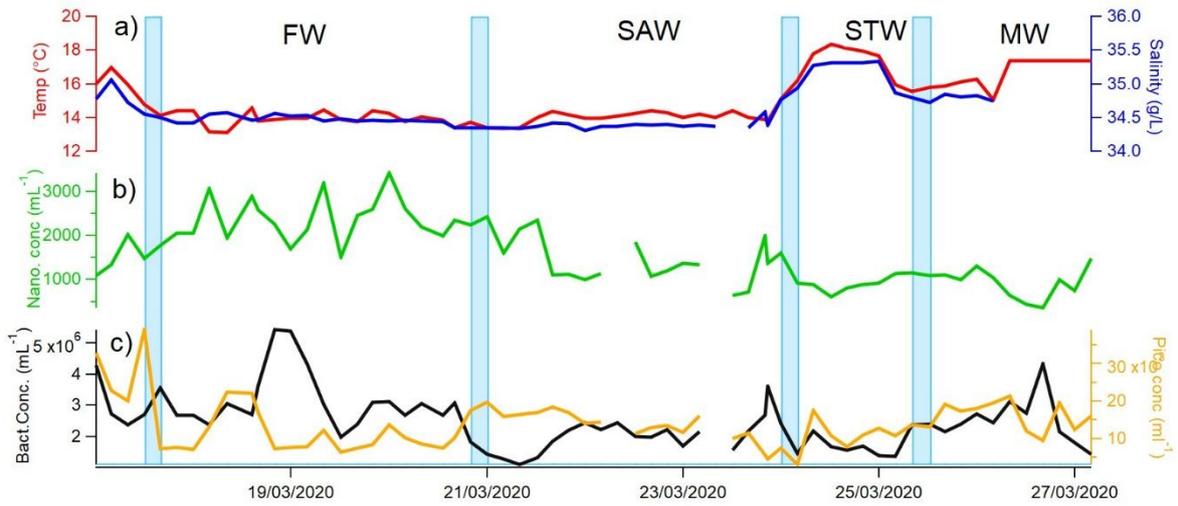


Figure S7: Time series of a selection of a) seawater salinity and temperature, b) Nano-phytoplankton concentration, and c) Total bacteria concentration and Pico-nanophytoplankton.

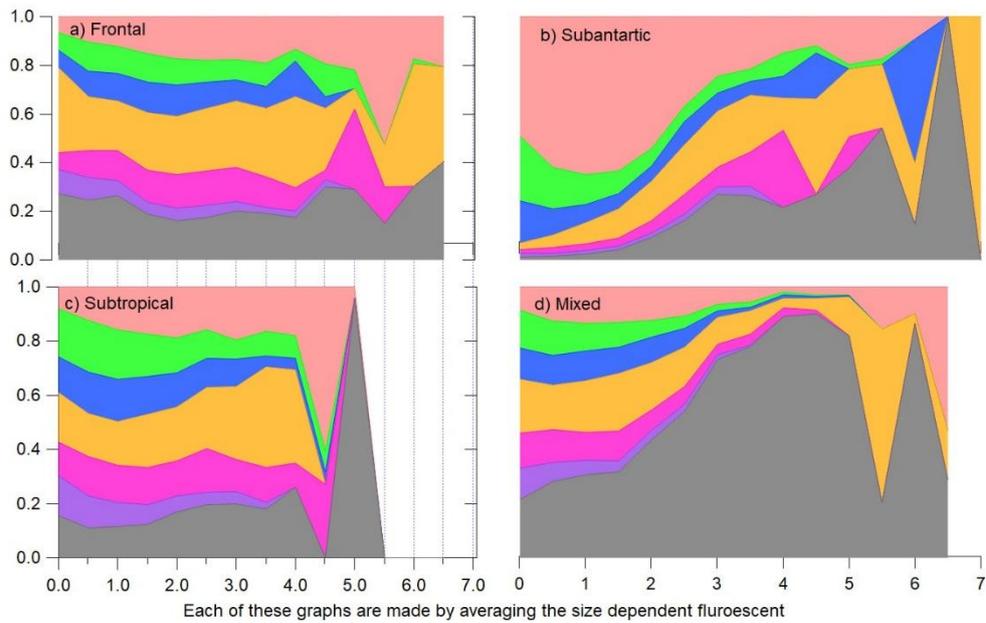


Figure S8: Fluorescence intensity as a function of particle diameter and water time (a) to d).

Supplementary Tables

Table S1: Summary of the biological measurements made during the Sea2Cloud cruise..

Name	Symbol	Medium	Unit
Salinity	S	SW	g/L
Temperature	T_{SW}	SW	°C
Chlorophyll-a	Chl-a	SW	mg·m ⁻³
<i>Synechococcus</i>	Syn.	SW	cells/mL
Nanophytoplanktons	NanoPhyto	SW	cells/mL
Picophytoplanktons	PicoPhyto	SW	cells/mL
Bacteria	Bact.	SW	cells/mL
Dinoflagellates	DiFl.	SW	mgC· m ⁻³
Diatoms	DiA.	SW	mgC· m ⁻³
Flagellates	Fl.	SW	mgC· m ⁻³
Total Organic Carbon	TOC	SW/SML	µg/L or µM
Total Nitrogen	TN	SW/SML	µg/L or µM
Dissolved Amino Acids	DAA	SW	nmol/L
Total Amino Acids	TAA	SW	nmol/L
Dissolved Carbohydrates	DCHO	SW	nmol/L
Total Carbohydrates	TCHO	SW	nmol/L
Aerosol concentration	N_{aer}	SSA	cm ⁻³
Aerosol surface	S_{aer}	SSA	m ² · cm ⁻³
NaCl in the SSA	NaCl _{SSA}	SSA	µg/aer
TOC in the SSA	TOC _{SSA}	SSA	µg/aer

Table S2: Classification of fluorescence signal by the WIBS instrument.

Channel	Excitation (nm)	Emission (nm)
A	280	310 to 400
B	280	420 to 650
C	370	420 to 650
AB	280	310 to 400 420 to 650
AC	280 370	310 to 400 420 to 650
BC	280 370	420 to 650
ABC	280 370	310 to 400 420 to 650 420 to 650