

SUPPORTING INFORMATION

Figure S1-S2: aerosol size distributions and mass spectra of ATOFMS

Table S1-S3: Alkylamines-ions concentrations and selected variables during the PEGASO cruise

Simultaneous detection of alkylamines in the surface ocean and atmosphere of the Antarctic sympagic environment

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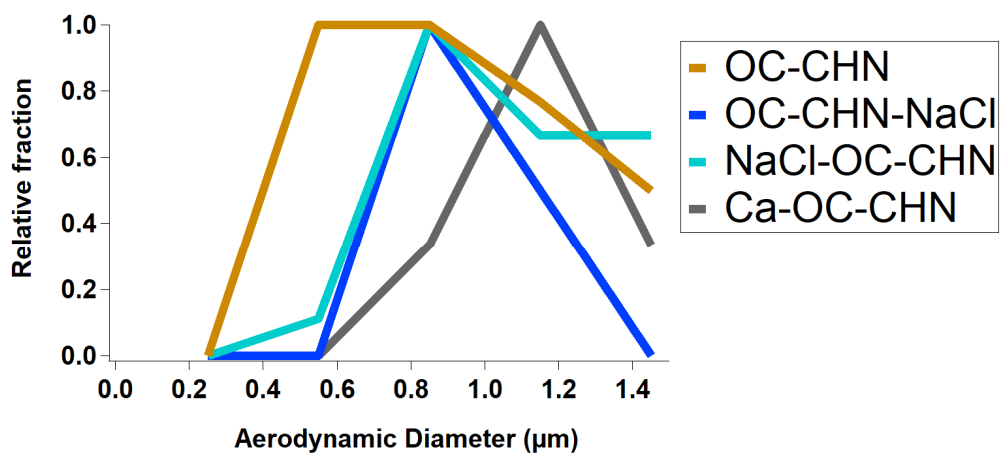


Figure S1 Size distributions of the 4 ATOFMS particle types described in Fig. 2.

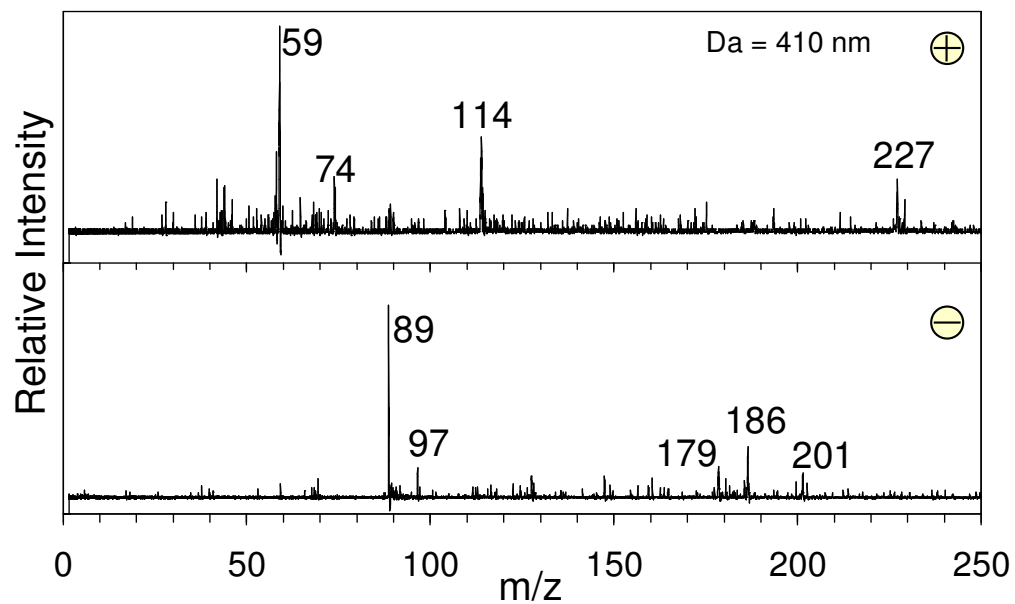


Figure S2. Single particle positive and negative mass spectra of an individual particle detected in Antarctic ambient air, containing alkylamines of secondary origin internally mixed mainly with oxalic acid.

Sampling names		Alkylamines concentrations (ng m ⁻³)				
		MA	EA	DMA	DEA	TMA
Weddell1	09-13 Jan 2015	0.36	0.13	2.31	4.93	1.15
Weddell2	13-18 Jan 2015	0.24	0.11	1.61	2.93	0.46
Weddell3	18-24 Jan 2015	0.44	0.14	2.15	3.65	0.81
S-SBACC (average ± std.dev.)		0.34 ± 0.1	0.12 ± 0.01	2.02 ± 0.4	3.84 ± 1.0	0.81 ± 0.3
Open1	24-28 Jan 2015	0.08	0.03	0.97	1.10	0.22
Open2	28-31 Jan 2015	0.04	0.01	0.53	0.53	0.08
Open3	06-09 Feb 2015	0.02	0.00	0.62	0.20	0.05
N-SBACC (average ± std.dev.)		0.05 ± 0.03	0.01 ± 0.01	0.71 ± 0.23	0.61 ± 0.46	0.12 ± 0.09

Table S1. Alkylamines concentrations during the PEGASO cruise

Sampling names		Ion concentrations (ng m ⁻³)							
		Na	SO ₄	NH ₄	NO ₃	Cl	Ca	K	Mg
Weddell1	09-13 Jan 2015	66	245	63	<DL	103	3.8	1.8	7.4
Weddell2	13-18 Jan 2015	67	326	55	<DL	47	1.7	1.5	7.4
Weddell3	18-24 Jan 2015	89	370	87	<DL	122	3.0	4.1	12.6
S-SBACC (average ± std.dev.)		73 ± 13	313 ± 63	68 ± 16	<DL	91 ± 38	2.8 ± 1	2.5 ± 1.4	9.1 ± 2.9
Open1	24-28 Jan 2015	246	176	31	<DL	439	14	7	28
Open2	28-31 Jan 2015	404	196	28	<DL	712	22	12	41
Open3	06-09 Feb 2015	1513	467	22	<DL	2887	54	62	213
N-SBACC (average ± std.dev.)		721 ± 690	279 ± 162	27 ± 4	<DL	1346 ± 1341	30 ± 21	27 ± 30	94 ± 103

Table S2. Ion concentrations (ng m⁻³) during PEGASO

Sampling names		RH	T (K)	ALWC (µg m ⁻³)	pH
Weddell1	09-13 Jan 2015	0.78	273.50	0.46	1.8
Weddell2	13-18 Jan 2015	0.82	273.04	0.76	0.5
Weddell3	18-24 Jan 2015	0.79	272.95	0.74	1.8
S-SBACC (average ± std.dev.)		0.80	273.16	0.65	1.4
Open1	24-28 Jan 2015	0.87	278.40	3.32	3.9
Open2	28-31 Jan 2015	0.94	276.33	10.91	3.3
Open3	06-09 Feb 2015	0.87	276.71	22.84	4.1
N-SBACC (average ± std.dev.)		0.89	277.15	12.36	3.8

Table S3. Selected variables calculated and measured during PEGASO.