

Seasonal Evolution of the Chemical Composition of Atmospheric Aerosol in Terra Nova Bay (Antarctica)

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Table S1. AAS instrumental parameters used for the metal determinations in atmospheric particulate matter.

Parameter	Al	Fe	Cd	Cu	Pb
Wavelength (nm)	396.2	248.3	228.8	327.4	283.3
Lamp current (mA)	10	10	5	4	5
Slit Width	0.5	0.2	0.5	0.5	0.5
Background correction	Zeeman effect				
Calibration mode	Calibration curve		Std. additions		

Table S2. Blank values obtained analyzing the field blank filters for Al, Fe, Cd, Cu and Pb.

Field blank filter	Metal concentrations (mean \pm SD), $\mu\text{g L}^{-1}$				
	Al	Fe	Cd	Cu	Pb
Soluble fraction	15 \pm 2	6.5 \pm 0.5	0.128 \pm 0.002	0.83 \pm 0.11	0.082 \pm 0.003
Insoluble fraction	205 \pm 14	1687 \pm 129	0.203 \pm 0.002	4.7 \pm 0.3	1.8 \pm 0.1
Total measured	320 \pm 12	542 \pm 22	0.201 \pm 0.011	7.6 \pm 0.2	2.6 \pm 0.3

Table S3. Atmospheric concentrations of the studied metals (Al, Fe, Cd, Cu and Pb) as sum of different metal fractions (soluble + insoluble fractions) and as direct measurement at Faraglione Camp during the austral summer 2013–2014. Concentrations are referred to standard air (298 K, 1013 hPa).

Sampling Period	Standard Air Volume (m ³)	AtmosphericConcentration ^a				
		Al (ngm ⁻³)	Fe (ngm ⁻³)	Cd (pgm ⁻³)	Cu (pgm ⁻³)	Pb (pgm ⁻³)
Computed total PM10 from chemical fractionation						
01/12/13-12/12/13	18,202	26 ± 3	27 ± 3	0.709 ± 0.12	30 ± 3	9.5 ± 1.3
12/12/13-22/12/13	16,096	20 ± 3	20 ± 3	1.1 ± 0.2	42 ± 6	21 ± 3
22/12/13-03/01/14	19,359	23 ± 3	25 ± 3	2.0 ± 0.4	57 ± 6	15 ± 2
03/01/14-13/01/14	16,180	29 ± 4	21 ± 3	0.56 ± 0.12	55 ± 5	22 ± 3
13/01/14-23/01/14	16,189	25 ± 3	29 ± 4	0.82 ± 0.27	39 ± 4	15 ± 2
23/01/14-02/02/14	16,230	25 ± 2	16 ± 2	3.2 ± 0.9*	41 ± 4	10 ± 1
Measured total PM10						
01/12/13-12/12/13	18,202	19 ± 2	21 ± 2	0.75 ± 0.10	28 ± 4	11 ± 2
12/12/13-22/12/13	16,096	20 ± 2	21 ± 2	1.0 ± 0.2	48 ± 8	21 ± 3
22/12/13-03/01/14	19,359	23 ± 2	24 ± 3	4.9 ± 0.9*	57 ± 7	14 ± 2

03/01/14-13/01/14	16,180	26 ± 3	24 ± 3	0.49 ± 0.09	48 ± 6	22 ± 3
13/01/14-23/01/14	16,189	25 ± 3	25 ± 3	0.69 ± 0.10	28 ± 4	15 ± 2
23/01/14-02/02/14	16,230	19 ± 2	18 ± 2	0.69 ± 0.12	40 ± 6	10 ± 2

^a ± SD computed as the square root of the sum of variances. *anomalous values