

Particle export during the Southern Ocean Iron Experiment (SOFeX)

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Web Appendix 1. South Patch ^{234}Th profiles.

Web Appendix 1. South Patch total ^{234}Th data.

Cast ID	Depth (m)	Total ²³⁴ Th			²³⁸ U			Temp (°C)	Salinity	Cast ID	Depth (m)	Total ²³⁴ Th			²³⁸ U			Temp (°C)	Salinity
		(dpm L ⁻¹)	Error		(dpm L ⁻¹)	Error						(dpm L ⁻¹)	Error						
Mel TM 08 IN 66.34°S, 171.96°W 30 Jan 02 0129 h GMT Fe-add = 5.75 d	5.0 14.0 22.0 33.0 42.0 54.0 84.0 126.0	2.10 2.03 1.98 1.97 2.23 2.29 2.56 2.48	±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05	2.38 2.38 2.38 2.38 2.38 2.40 2.41 2.41	±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05	-0.499 -0.518 -0.506 -0.802 -1.680 -1.706 -1.438 0.760	33.721 33.806 33.757 33.867 34.162 34.207 34.301 34.573	Mel TM 37 IN 66.17°S, 172.21°W 8 Feb 02 2012 h GMT Fe-add = 15.53 d	5.1 11.1 17.0 27.0 32.5 42.9 67.2 100.9	1.98 2.02 1.99 1.96 1.82 1.98 2.36 2.44	±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04	2.39 2.38 2.39 2.39 2.38 2.39 2.41 2.42	-0.646 -0.643 -0.665 -0.645 -0.648 -0.764 -1.309 -0.487	33.881 33.866 33.929 33.854 33.840 33.840 34.006 34.265 34.375					
Mel TM 11 OUT 66.31°S, 171.39°W 31 Jan 02 0307 h GMT Fe-add = 6.82 d	2.3 16.9 30.0 43.6 53.4 69.0 108.0 162.7	1.85 1.94 1.81 1.94 2.04 2.51 2.72 2.55	±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05	2.37 2.38 2.38 2.38 2.37 2.38 2.40 2.44	±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05 ±0.05	-0.672 -0.670 -0.681 -1.371 -1.719 -1.763 -0.825 1.199	33.815 33.794 33.778 34.167 34.207 34.260 34.367 34.653	Mel TM 43 IN 66.10°S, 172.07°W 10 Feb 02 2044 h GMT Fe-add = 17.55 d	3.6 8.1 13.7 19.6 26.0 32.7 76.8	1.91 1.91 1.83 1.76 1.87 1.81 2.64	±0.05 ±0.04 ±0.04 ±0.04 ±0.04 ±0.05 ±0.05	2.35 2.33 2.33 2.38 2.37 2.39 2.41	-0.348 -0.441 -0.484 -0.520 -0.560 -0.641 -1.285	33.134 33.432 33.656 33.757 33.813 33.938 34.286					
Mel TM 17 OUT 66.59°S, 172.20°W 1 Feb 02 2051 h GMT Fe-add = 8.56 d	4.4 13.2 21.6 32.6 42.4 53.3 83.1	2.12 2.03 2.04 1.91 1.93 2.17 2.63	±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.05 ±0.05	2.38 2.38 2.38 2.38 2.38 2.40 2.41	±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.05 ±0.05	-0.740 -0.764 -0.768 -0.773 -1.010 -1.708 -1.640	33.759 33.757 33.744 33.746 33.908 34.152 34.275	Mel TM 46 OUT 66.03°S, 170.99°W 12 Feb 02 2100 h GMT Fe-add = 19.56 d	3.7 12.9 21.6 32.5 40.6 53.9 83.0 123.7	1.99 1.88 1.99 1.84 1.97 2.12 2.61 2.47	±0.04 ±0.04 ±0.05 ±0.04 ±0.04 ±0.05 ±0.05	2.35 2.35 2.35 2.36 2.35 2.37 2.38 2.41	-0.382 -0.392 -0.394 -0.451 -0.459 -0.938 -1.571 0.636	33.870 33.869 33.869 33.871 33.870 33.995 34.272 34.590					
Mel TM 28 IN 66.26°S, 171.96°W 4 Feb 02 0137 h GMT Fe-add = 10.75 d	6.0 11.3 17.9 26.0 34.3 44.7 71.1	1.91 1.88 1.90 1.92 1.97 2.02 2.49	±0.04 ±0.03 ±0.04 ±0.04 ±0.04 ±0.04 ±0.05	2.38 2.39 2.38 2.38 2.38 2.38 2.41	±0.04 ±0.03 ±0.04 ±0.04 ±0.04 ±0.04 ±0.05	-0.699 -0.691 -0.705 -0.683 -0.678 -0.794 -1.694	33.917 33.886 33.964 33.850 33.831 33.892 34.329	Mel TM 52 IN 65.95°S, 172.19°W 14 Feb 02 2224 h GMT Fe-add = 21.62 d	2.8 8.3 12.7 19.6 24.6 31.0 50.9 75.8	1.96 1.99 1.99 1.81 1.99 1.82 1.98 2.27	±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.03 ±0.03 ±0.04	2.36 2.36 2.37 2.36 2.36 2.36 2.36 2.38	-0.370 -0.370 -0.372 -0.372 -0.426 -0.592 -0.900 -1.014	33.917 33.917 33.917 33.917 33.918 33.921 34.009 34.330					
Mel TM 33 OUT 66.31°S, 171.39°W 4 Feb 02 2225 h GMT Fe-add = 12.62 d	5.0 12.2 21.7 34.3 43.7 55.2 84.8 129.6	1.85 1.79 1.83 1.71 1.78 2.08 2.59 2.53	±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04	2.37 2.38 2.38 2.38 2.37 2.38 2.40 2.44	±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04 ±0.04	-0.495 -0.543 -0.557 -0.583 -0.655 -1.575 -1.034 1.191	33.353 33.578 33.230 33.797 33.802 34.153 34.310 34.593	PS BC 01 IN 65.90°S, 171.97°W 15 Feb 02 0010 h GMT Fe-add = 21.69 d	33.9 50.9 68.0	1.76 1.83 1.95	±0.03 ±0.04 ±0.03	2.39 2.39 2.39	nd nd nd	33.911 33.905 33.952					

Web Appendix 1. Continued.

Cast ID	Depth (m)	Total ²³⁴ Th		²³⁸ U		Temp (°C)	Salinity	Cast ID	Depth (m)	Total ²³⁴ Th		²³⁸ U		Temp (°C)	Salinity
		(dpm L ⁻¹)	Error	(dpm L ⁻¹)	Error					(dpm L ⁻¹)	Error	(dpm L ⁻¹)	Error		
PS BC 02	28.8	1.83	±0.05	2.39	±0.05	nd	33.893	PS BC 05	6.6	1.94	±0.03	2.38	±0.03	-0.402	33.735
IN	48.1	1.97	±0.04	2.39	±0.04	nd	33.905	OUT	26.6	1.82	±0.03	2.38	±0.03	-0.418	33.732
65.90°S, 171.97°W	67.3	2.17	±0.04	2.40	±0.04	nd	34.091	65.57°S, 172.93°W	46.6	1.91	±0.03	2.38	±0.03	-0.446	33.743
15 Feb 02	86.5	2.34	±0.04	2.41	±0.04	nd	34.239		66.6	2.26	±0.04	2.40	±0.04	-1.268	34.071
0235 h GMT	105.7	2.34	±0.04	2.42	±0.04	nd	34.367		86.6	2.41	±0.03	2.42	±0.03	-0.234	34.433
Fe-add = 21.80 d	125.0	2.61	±0.04	2.43	±0.04	nd	34.555		106.6	2.56	±0.04	2.43	±0.04	0.549	34.454
PS CTD 02	10.6	1.74	±0.03	2.39	±0.03	-0.382	33.918	PS CTD 04	20.7	1.72	±0.04	2.39	±0.04	-0.276	33.904
IN	20.3	1.68	±0.03	2.39	±0.03	-0.380	33.934	IN	49.9		±0.06	2.39	±0.06	-0.384	33.913
65.96°S, 172.07°W	50.5	1.98	±0.04	2.40	±0.04	-0.853	34.010	65.91°S, 172.19°W	70.3	2.12	±0.04	2.40	±0.04	-1.176	34.096
16 Feb 02	70.0	2.23	±0.05	2.41	±0.05	-1.257	34.217	19 Feb 02	125.3	2.69	±0.04	2.44	±0.04	0.749	34.602
2235 h GMT	79.6	2.36	±0.05	2.42	±0.05	-0.916	34.336	0615 h GMT							
Fe-add = 23.63 d	100.5	2.46	±0.04	2.43	±0.04	0.307	34.533	Fe-add = 25.95 d							
	149.2	2.46	±0.04	2.44	±0.04	1.327	34.694								
PS BC 03	19.0	1.82	±0.03	2.39	±0.03	-0.379	33.942	PS CTD 05	19.6	1.92	±0.04	2.39	±0.04	-0.231	33.877
IN	39.0	1.80	±0.05	2.39	±0.05	-0.427	33.980	OUT	50.0	1.93	±0.04	2.39	±0.04	-0.444	33.921
65.89°S, 172.13°W	59.0	1.74	±0.03	2.39	±0.03	-0.898	34.019	65.91°S, 170.79°W	69.9	2.39	±0.05	2.41	±0.05	-1.270	34.180
17 Feb 02	79.0	2.22	±0.04	2.41	±0.04	-1.349	34.247	19 Feb 02	100.0	2.61	±0.05	2.43	±0.05	-0.429	34.445
0345 h GMT	99.0	2.54	±0.04	2.43	±0.04	-0.382	34.441	2205 h GMT	125.2	2.34	±0.06	2.44	±0.06	0.893	34.614
Fe-add = 23.8 d	119.0	2.51	±0.04	2.44	±0.04	-0.769	34.604	Fe-add = 26.61 d							
PS BC 04	32.4	2.11	±0.04	2.38	±0.04	-0.356	33.766	PS CTD 06	9.9	1.84	±0.04	2.39	±0.04	-0.275	33.898
OUT	52.4	1.92	±0.03	2.38	±0.03	-0.497	33.837	IN	35.1	1.90	±0.04	2.39	±0.04	-0.268	33.882
66.17°S, 172.61°W	72.4	2.19	±0.04	2.40	±0.04	-1.064	33.967	65.85°S, 171.95°W	49.7	1.84	±0.04	2.39	±0.04	-0.324	33.910
17 Feb 02	92.4	2.58	±0.04	2.42	±0.04	-1.244	34.276	20 Feb 02	70.0	1.90	±0.04	2.40	±0.04	-1.020	34.056
2330 h GMT	112.4	2.39	±0.06	2.42	±0.06	-0.167	34.439	1753 h GMT	80.2	2.33	±0.05	2.41	±0.05	-1.374	34.253
Fe-add = 24.67 d	132.4	2.49	±0.04	2.44	±0.04	0.797	34.588	Fe-add = 27.43 d	100.6	2.42	±0.05	2.43	±0.05	-0.101	34.477
									124.7	2.35	±0.05	2.44	±0.05	1.017	34.647
									151.2	2.52	±0.05	2.44	±0.05	1.324	34.703

Mel TM #, RV Melville trace metal cast no.; PS CTD #, RIB Polar Star CTD cast no.; PS BC #, RIB Polar Star bottle cast no.; nd, not done.