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Microbial sulfur cycling across a 13 500-year-old lake sediment record

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Table S1 : All solid-phase data obtained from Lake Cadagno short and long cores. Sediment layer origin (terrestrial versus lacustrine) is specified.

depth (cm)	sediment (type)	AVS (umol/g sed)	CRS (umol/g sed)	S0 (umol/g sed)	FeIII (umol/g sed)	HAS (umol/g sed)	TOC (wt %)	TIC (wt %)	%S-tot (wt %)	TOC:TOS	TC:TS	δ34 AVS (‰)	δ34S HAS (‰)	δ34 CRS (‰)
-1	water													
0	Lac			295.25	122.21		14.29	2.02	1.26		12.91			
1	Lac	0.02	2.90	232.03			15.88	1.33	1.85		9.29			
2	Lac	11.58	16.40	256.37	0.00		17.71	0.27	1.57		11.44	-2.06		-6.28
3	Lac	47.54	31.46	211.40	57.46		17.30	0.77	1.96	28.01	9.20	-4.29	-6.21	
4	Lac	27.55	9.38	172.38	0.00	1.93	13.31	1.11	1.61		8.96			
6	Lac	72.36	16.08	122.71	0.00		11.73	0.83	1.78	4.36	7.05	-5.91	-7.58	-8.81
8	Lac	96.09				8.39	12.55	0.94	2.80		4.82	-7.54		
10	Lac	119.27	144.01	89.70	16.95		12.46	0.39	2.74	3.85	4.69	-9.06	-7.62	2.36
12	Lac	35.09	198.04	63.35	0.00	10.09	12.19	0.53	3.42	5.03	3.72		-2.48	2.13
14	Lac	27.80	190.25	52.14	20.55	7.55	8.29	1.68	4.28		2.33	-12.12		2.30
16	Lac	26.41	153.32	29.88	0.00		8.66	0.78	3.81		2.48	-16.43		-0.12
18	Terr	0.31	216.92	23.96	0.00		6.53	0.66	3.91	8.73	1.84		-9.46	-4.72
20	Terr	7.20	45.30	5.49	0.00	2.33	2.32	0.00	1.40		1.29	-12.98		-11.58
22	Terr	1.78	3.20	0.74	8.48		1.42	0.00	1.28	8.52	0.84		-2.74	-8.41
24	Lac	0.00	274.60	14.65	0.00	0.52	4.20	0.00	2.85		1.31			-10.89
26	Lac	0.24	40.67	0.31	0.00		0.89	0.00	0.89	3.01	0.97		-2.79	-13.43
28	Terr		143.29	2.92		0.92	4.47	0.00	3.87		1.04			-2.73
30	Terr	1.86		3.00	0.00		1.22	0.31	1.68	2.51	0.91		-6.85	3.93
32	Lac			1.50		1.51	2.09	0.43	4.75		0.53			8.58
34	Terr	0.52	139.39	1.94	0.00		1.67	0.36	2.81	2.45	0.72	21.75	9.58	13.41
36	Terr	0.20	27.93	1.70		2.12	2.83	0.00	1.59		0.76			11.12
38	Terr		234.63	13.51	66.61		1.70	2.14	1.56		1.37			6.09
40	Terr	1.94		6.29	12.05	2.14	1.81	0.15	1.11	2.64	1.66	13.51	5.40	1.66
153.5	Terr	1.97	0.08	1.06	25.94	2.54	1.30	0.00	1.30	1.59	0.99		-3.63	-4.47
161.5	Lac		73.06	2.51		3.14	5.81		4.11		1.41		-5.49	-2.13
170	Lac		271.47	5.23		1.58	6.47		4.59	6.42	1.41			2.45
176.5	Terr	3.21	0.05	1.90	5.23		2.14	0.00	2.03		0.67			8.14
187.5	Terr	6.29	0.04	6.75	0.00	2.36	2.81	0.00	0.94	3.71	2.87	-0.75	-4.72	-5.30
213.5	Terr	0.42	0.04	0.36	15.67		2.30	0.00	1.47		1.12			9.14
217	Lac		98.62	4.27		1.93	5.51		2.83	10.86	1.94			3.88
226	Lac		121.13	8.53		1.63	6.58		2.91	10.66	2.26			1.35
233.9	Terr	2.21	0.07	0.57	5.67	1.19	2.08	0.00	2.35	5.45	0.89	17.38	0.89	4.32
243.9	Terr	1.32	0.01	0.71	0.00		4.13	0.00	0.14		20.86	8.45		3.06
261.9	Terr	2.07	0.01	1.03	0.00	1.61	1.48	0.00	0.61	2.85	1.44		-0.74	
283.4	Terr	0.50	0.05	0.60	0.00		1.43	0.04	1.85		0.79			10.47
300.95	Terr	1.33	0.09	1.40	0.00	1.49	1.99	0.00	2.03	4.15	0.84	14.06	2.53	6.07
312.5	Terr	0.01	0.15	2.24	0.00		2.05	0.41	0.99		2.49	7.83		-0.77
327	Terr	11.70	0.01	3.19	0.00		1.88	0.29	1.94		1.12	-0.26		-4.32
337	Terr	0.32	0.11	1.81	0.00	1.16	4.49	0.00	0.92	12.04	2.45		-3.97	-4.07
349	Lac		132.10	10.27		4.12	6.54		2.26	12.52	2.89		-5.63	0.89
362	Lac	0.00	0.03	0.98	0.00		2.55	0.00	1.88		0.72	9.87		-0.12
373	Lac		8.63	6.98		3.12	10.44		4.50	7.89	2.32		-10.08	3.41
382	Terr	0.24	0.07	0.34	0.00	1.04	1.14	0.00	0.48	3.42	1.99		-3.28	2.62
414	Terr	0.60	0.02	1.05	0.00		1.94	1.77	1.48	4.34	1.73		-2.74	-15.30
430	Lac		18.40	7.68		2.25	10.48		2.66	10.47	3.95		-2.29	2.83
434	Terr	0.00	0.02	1.56	0.00	1.40	4.80	0.00	1.80		1.22			-4.31
446	Lac		146.00	9.05		0.89	6.62		2.75	9.18	2.40		-2.01	3.94
454	Terr	0.27	0.10	0.33	0.00		2.69	0.00	1.65	6.64	1.22		-0.99	-2.83
467.5	Terr	0.00	0.07	0.83	0.00	1.26	1.01	1.00	0.56		2.51			6.19
483.5	Terr	0.75	0.06	2.28	16.62		5.45	0.00	0.46	10.82	3.98	0.97	-4.85	-2.11
492.5	Terr	0.70	0.01	1.22	0.00	1.57	1.80	0.02	0.62		2.10	-7.73		-13.83
512.5	Terr	0.95	0.05	2.19	0.00		1.51	0.00	0.54	2.98	3.17	3.07	-2.91	-5.52
521.5	Lac		16.27	9.33		1.67	4.90		1.38	17.13	3.54			-1.37
532.5	Terr	0.44	0.01	0.06	0.00	1.58	1.97	0.00	1.51		1.01	-9.33		4.04
532.5	Lac		21.05	2.17		2.32	1.72		1.90	3.21	0.91		-6.04	-5.05
548.5	Terr	0.64	0.12	0.36	0.00		1.96	0.00	2.51	5.89	0.74		-0.23	4.23
566.35	Terr	1.49	0.03	0.28	0.00	1.04	4.46	0.00	0.94		3.61			-1.34
579	Lac		4.35	15.80		1.21	8.76		1.90	11.77	4.62		-5.11	5.21
582	Lac		0.15	0.09	0.00		4.29	0.00	2.02	31.70	1.57		-0.15	1.69
588.5	Lac		251.27	17.57		2.92	9.39		4.09	24.19	2.30		-2.42	0.25
600	Terr	0.41	0.19	2.28	0.00	0.42	3.28	0.00	8.93		0.12	9.90		4.98
622	Terr		0.02	0.38	0.00		1.09	0.00		2.04			-2.79	-15.77
634	Lac		42.72	21.85		3.34	7.60		3.69	8.12	2.06		-9.89	-13.04
639.5	Terr	0.97	0.03	0.62	0.00	1.66	4.46	0.00						-6.76
642.5	Lac					1.73	10.94		4.87	10.22	2.25			
673	Lac	0.60	0.12	0.07	0.00		3.48	0.60		6.22			-6.61	-15.55
673.5	Lac					0.85	8.79		6.65	15.80	1.32			
688.5	Lac		11.07	2.23		4.40	12.12		4.65	44.50	2.60			-10.82
693.5	Lac	0.00	0.09	0.07	0.00	1.75	7.29	0.00						-30.94
713.5	Lac		12.10	3.23		2.76	12.46		4.63	8.83	2.69			-31.49
714.5	Lac		37.92	1.92		0.88	15.06		5.04	17.05	2.99			-37.29
717.5	Terr		0.13	0.46	0.00		5.46	0.00		8.58			-25.88	-38.02
738.5	Lac	0.00	0.07	8.63	0.00	1.99	4.66	0.00						-41.43
756.5	Terr	3.22	0.03	2.23	0.00		0.57	0.00		1.73		-28.51	-10.67	-33.59
759.5	Lac		8.04	18.28		0.43	4.63		2.07	16.48	2.23		-7.65	-47.46
772.65	Terr	8.88	0.01	31.67	0.00	1.03	1.24	0.00				-33.83		-39.02
776.5	Lac	0.99	57.41	22.72			1.20		1.74	8.78	0.69	-29.71		-37.21
789.65	Terr	6.79		0.82	0.00		0.36	0.00				-3.55		
809.65	Terr			0.11	0.00		0.28	0.00						
829.65	Terr	0.12	0.01	3.58	0.00		0.35	0.00						-31.41
839.65	Terr	0.81		0.22	0.00		0.31	0.00						
871.25	Terr			0.19	0.00		0.24	0.00						
891.25	Terr			0.07	41.63		0.26	0.00						
911.25	Terr	0.10		0.06	14.40		0.22	0.00						

Table S2 : Dissolved-phase data obtained from Lake Cadagno short and long cores. Sediment layer origin (terrestrial versus lacustrine) is specified.

depth (cm)	SO_4^{2-} (mmol/l)	δ34 SO4 (‰)	ΣH_2S (umol/l)	Fe^{+2} (umol/l)	δ34 H2S (1991) (‰)	δ34 SO4 (1991) (‰)
-1		24.33				21.45
0		29.54		0.18	4.577	31.75
1			12.84	0.18		
2	1.49	60.24	542.71	0.00		
3	1.35		490.26	0.00		
4	1.79	46.39	534.65	0.54		
6	1.04		557.06	0.00	6.06	
8		45.16	332.51			
10	1.11		383.24	1.79		
12	0.46		441.05	0.54	5.1	
14	0.40		390.95	0.00		
16			374.50			39.35
18	0.22		179.82	0.00		
20	0.11		269.62	0.00	3.38	
22	0.09		296.08	0.72		32.1
24	0.00		207.58		2.72	
26	0.05	30.69	252.41	0.18		29.67
28	0.04		219.29	0.90		
30	0.01		181.50			
32	0.01		140.32	0.54	3.06	30.86
34	0.01		116.39	1.79		
36	0.00		186.11	0.00		
38	0.00		31.35	10.21		
40	0.00		6.43	79.33		
44			2.58	145.28		
141.5	0.03		1.71	8.42		
151.5	0.01		2.10	20.06		
162.5				39.39		
171.5	0.01		2.94	53.54		
181.5			1.31	49.78		
200.5	0.01		0.00	37.43		
210.5	0.02		0.03	36.89		
223.90	0.02		4.20	34.02		
233.9	0.05		0.13	14.86		
245.9	0.02		1.12	30.98		
256.9	0.01		0.47	42.44		
269.9	0.01		2.25	17.91		
280.9	0.03		0.00	49.42		
291.00	0.01		0.67	45.48		
312			0.67	30.80		
322.0	0.01		1.07			
342.0			4.08			
352.0	0.01		3.02			
382.0	0.01		0.00			
405			1.26			
415.0			4.42			
425.0	0.01		0.00			
434.0	0.03		0.00			
453.0	0.02		0.00			
463.0	0.01		0.00			
471.5	0.02		0.00	78.79		
481.5	0.01		0.00	70.37		
491.5				64.11		
501.5	0.01		0.00	50.14		
511.5			0.00	53.72		
521.5	0.01	6.78	0.00	44.95		
531.5	0.01		0.00	38.14		
541.5			0.00	33.13		
551.5			0.00	23.46		
561.5				34.02		
572.3				70.73		
583.00			0.00	44.77		
593.0			0.00	55.51		
613.0	0.01		0.00	60.35		
623.0	0.01		0.00	50.86		
634.0			0.00	53.18		
694.5	0.01		3.32			
704.5	0.01		0.00			
726.50	0.01		0.97			
736.5			3.68			
746.50				17.73		
756.5	0.01		2.25	14.33		
760.6			0.00	13.25		
770.6	0.01		3.73	12.89		
780.6	0.01		0.62	6.98		
790.6	0.01		2.55	4.66		
800.6	0.08		2.35	2.87		
810.6	0.10		8.76	1.43		
820.6	0.15		2.64	0.90		
830.6	0.14		1.07	0.54		
840.65				1.43		
850.6	0.12		1.31	0.36		