

Supplement of Biogeosciences, 15, 471–490, 2018
<https://doi.org/10.5194/bg-15-471-2018-supplement>
© Author(s) 2018. This work is distributed under
the Creative Commons Attribution 3.0 License.



Supplement of

Carbon mineralization in Laptev and East Siberian sea shelf and slope sediment

Volker Brüchert et al.

Correspondence to: Volker Brüchert (volker.bruchert@geo.su.se)

The copyright of individual parts of the supplement might differ from the CC BY 3.0 License.

Supplementary Table 1. Boundary conditions for porewater modelling

Station	1	23	30
Domain (top, bottom) cm	-0.5 , 32.5	-0.5 , 32.5	-0.5 , 22.5
Boundary conditions for concentrations			
Top			
O ₂ (μM)	346	325	309
DIC (μM)	2300	2442	2367
Mn ²⁺ (μM)	0.04	0.21	0.18
Fe ²⁺ (μM)	0.26	0.37	0.28
Bottom			
O ₂ (μM)	213 (6 cm)	0	0
DIC (μM)	3378	4853	6436
Mn ²⁺ (μM)	0.07	47.2	125.5
Fe ²⁺ (μM)	0.1	74.9	123.9
Molecular diffusion coefficient (10 ⁻⁶ cm ² sec ⁻¹)			
O ₂	0.99	0.99	1.00
DIC (weighted CO ₂ /CO ₃ ²⁻ /HCO ₃ ⁻) pH 8.2	4.85	4.86	4.89
Mn ²⁺	3.22	3.22	3.20
Fe ²⁺	3.34	3.34	3.32
Porosity range (top, bottom)			
	1 ; 0.6	1 ; 0.5	1 ; 0.55
Bioturbation coefficient (10 ⁻⁴ cm ² sec ⁻¹)			
	0.00	0.00	0.00
Bioirrigation coefficient (10 ⁻⁴ cm ² sec ⁻¹)			
	0.00	0.00	0.00

D0 O2	0.99	1.00	0.99
D0 HCO3-	9.0	9.0	9.0
D0 NH4+	4.9	4.9	4.9
HCO3-/NH4+	0.54	0.54	0.55
K NH4+	1.3	1.3	1.3
Correction factor for DIC/NH4 plots	2.37	0.70	0.71

45	53	63
-0.5, 16.5	-0.5, 20.5	-0.5, 45

361	350	285
2576	2494	2425
0.07	0.49	19.76
0.51	0.52	0.74

0	0	0
4802	3291	6250
313.5	222.3	115.3
134.0	214.8	182

1.01	1.00	1.01
4.97	4.89	4.94
3.14	3.20	3.17
3.26	3.32	3.28

1 ; 0.5	1 ; 0.6	1 ; 0.52
---------	---------	----------

0.00	0.00	0.00
------	------	------

0.00	1.00	0.00
------	------	------

0.97	0.99	0.98
8.8	9.0	8.9
5.0	4.9	4.9
0.57	0.55	0.56
1.3	1.3	1.3
0.73	0.71	0.72