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Supplement of

Dynamics of primary productivity in the northeastern Bay of Bengal over the last 26 000 years

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Supplementary Figures

Fig. S1. Age model of core MD77-176. This age model was a tuned model constructed by Marzin et al., (2013).

Fig. S2. Changes of the maximum in the AMOC stream function below 500 m (AMOC strength) in LGMc and LGMf experiments run with IPSL-CM5A-LR for nearly 500 model years, which are labeled from 2950 to 3450 in the numerical experiments.

Fig. S3. Changes of the maximum in the AMOC stream function below 500 m (AMOC strength) in the full TraCE-21 simulation over the 22 kyr model time and melt water of ice sheets single forcing simulation (MWF) over the 19 kyr model time. Significant variations are found between 19 and 11 kyr (the deglaciation)

Fig. S4. Annual mean results of net precipitation (P-E), SSS, SST and potential density difference between 200 and 5 m (ΔPD) in full TraCE-21 simulation, and single forcing simulations (section 3.3.2): orbital insolation (ORB), green-house gas concentration (GHG), meltwater flux (MWF) and ice sheet (ICE). Over the last deglaciation time from 19 to 11 kyr, the results show that the millennial-scale variations of net precipitation, SSS and stratification are mainly contributed by MWF forcing which moderated AMOC strength. The changes in other single forcing experiment show no obvious millennial-scale variations during the last deglaciation. The changes of SST during the deglaciation is very limited.

Fig. S5. Geographic map of South Asia, the Bay of Bengal and the Andaman Sea, the The map was created by the Ocean Data View software (©Reiner Schlitzer, Alfred Wegener Institute) with its built-in global high resolution bathymetric data (GlobHR). The grids of data extracting. Black cross are grids for TraCE-21 atmospheric outputs. Blue grids are for TraCE-21 oceanic outputs. The yellow, green and red dots mark the locations of Mawmluh Cave, core SO188-342 and core MD77-176 respectively.

Supplementary data

Relative abundances (%) of main coccolith species of core MD77-176. Emi = *Emiliania huxleyi*, Gep = *Gephyrocapsa* spp., Fp = *Florisphaera profunda*.

Depth (cm)	Age (ka)	Emi %	Gep %	Fp %	Other %
10.5	1.04	4.72	15.41	75.63	4.25
22.5	1.44	4.71	18.31	73.13	3.85
25.5	1.53	4.12	15.36	78.74	1.78
28.5	1.63	5.14	20.55	70.88	3.43
31.5	1.72	4.16	16.34	75.07	4.43
34.5	1.81	6.18	15.29	74.95	3.58
37.5	1.89	4.2	22.49	69.81	3.5
40.5	1.98	4.52	17.31	75.16	3.01
43.5	2.06	4.24	9.32	83.90	2.54
46.5	2.15	5.67	16.21	74.23	3.89
49.5	2.22	4.43	17.86	73.29	4.43
52.5	2.3	5.11	10.1	81.67	3.12
55.5	2.38	3.21	9.27	86.63	0.89
58.5	2.46	6.62	8.62	83.23	1.54
61.5	2.54	5.13	18.04	73.61	3.23
64.5	2.61	6.38	20.5	68.25	4.88
67.5	2.68	5.02	15.94	74.92	4.12
70.5	2.75	6.7	11.9	78.52	2.87
73.5	2.82	4.16	11.76	81.21	2.87
76.5	2.89	5.28	9.28	82.09	3.35
79.5	2.96	6.44	13.37	76.98	3.22
82.5	3.03	5.39	11.21	80.71	2.7
85.5	3.09	5.21	10.42	81.51	2.85
88.5	3.16	4.69	16.28	73.10	5.93
91.5	3.22	6.93	15.47	73.76	3.84
94.5	3.28	6.78	12.25	76.93	4.04
97.5	3.35	6.22	15.05	73.76	4.98
100.5	3.41	5.12	12.4	79.54	2.94
103.5	3.47	5.93	10.51	79.48	4.08

Depth (cm)	Age (ka)	Emi %	Gep %	Fp %	Other %
106.5	3.53	5.65	14.03	77.91	2.41
109.5	3.58	2.79	14.9	78.83	3.48
112.5	3.64	4.19	16.4	75.70	3.72
115.5	3.7	3.82	11.01	82.36	2.81
118.5	3.76	5.35	9.67	80.32	4.66
121.5	3.81	5.8	19.62	71.10	3.48
124.5	3.87	5.07	14.68	77.04	3.21
127.5	3.92	4.72	9.55	82.22	3.51
130.5	3.98	5.35	8.96	83.16	2.54
133.5	4.03	4.43	10.76	82.03	2.78
136.5	4.08	5.26	11.89	80.69	2.17
139.5	4.14	2.72	11.93	82.75	2.59
142.5	4.19	4.81	15.78	74.97	4.44
145.5	4.24	4.48	13.34	78.00	4.18
148.5	4.29	5.18	15.15	74.37	5.3
151.5	4.35	4.18	14.73	78.54	2.55
154.5	4.4	5.68	13.46	77.18	3.68
157.5	4.45	8.1	9.4	80.12	2.38
160.5	4.5	6.48	15.31	75.03	3.18
163.5	4.55	4.3	13.86	78.26	3.58
166.5	4.6	4.27	11.38	80.09	4.27
169.5	4.65	4.52	15.93	75.41	4.14
172.5	4.7	4.31	8.49	84.33	2.87
175.5	4.75	5.35	13.75	77.59	3.31
178.5	4.8	6.02	11.08	77.96	4.95
181.5	4.85	4.35	13.78	77.39	4.47
184.5	4.91	4.62	14.5	77.52	3.36
187.5	4.96	5.76	7.75	83.28	3.21
190.5	5.01	6.47	10.27	79.06	4.2
193.5	5.06	5.42	16.03	73.81	4.74
196.5	5.11	5.61	9.27	81.71	3.41
199.5	5.16	4.82	10.81	79.69	4.69
202.5	5.21	4.46	11.01	81.91	2.62
205.5	5.27	5.53	7.1	84.34	3.03

Depth (cm)	Age (ka)	Emi %	Gep %	Fp %	Other %
208.5	5.32	6.74	9.77	78.37	5.12
211.5	5.37	5.7	12.44	77.79	4.07
214.5	5.42	4.53	12.69	77.20	5.57
217.5	5.48	5.95	15.33	73.98	4.74
220.5	5.53	7.42	13.39	74.35	4.84
223.5	5.58	6.23	11.25	78.35	4.18
226.5	5.64	6.33	12.85	76.61	4.22
229.5	5.69	5.82	12.55	76.22	5.41
232.5	5.75	3.6	6.56	87.77	2.06
235.5	5.8	5.74	8.57	81.99	3.7
238.5	5.86	5.86	9.01	81.65	3.47
241.5	5.92	5.7	8.94	82.41	2.95
244.5	5.98	4.84	8.44	83.33	3.4
247.5	6.03	4.14	11.31	80.05	4.5
250.5	6.09	4.43	10.11	82.39	3.07
253.5	6.15	5.42	11.16	78.98	4.44
256.5	6.21	4.92	6.93	85.74	2.41
259.5	6.27	3.32	8.31	85.80	2.57
262.5	6.33	4.86	8.46	82.56	4.12
265.5	6.4	4.36	12.85	78.54	4.25
268.5	6.46	3.3	9.9	83.51	3.3
271.5	6.52	6.97	13.18	74.28	5.57
274.5	6.59	4.62	9.06	84.01	2.31
277.5	6.65	3.71	15.03	77.64	3.62
280.5	6.72	4.03	13.89	77.51	4.57
283.5	6.78	4.22	12.76	78.33	4.68
286.5	6.85	3.06	18.03	73.66	5.25
289.5	6.92	4.45	8.99	82.59	3.97
292.5	6.99	4.86	10.8	79.58	4.76
295.5	7.06	2.49	8.28	85.33	3.91
298.5	7.13	4.08	7.7	85.28	2.94
301.5	7.2	5.26	12.77	77.22	4.76
304.5	7.27	3.28	8.26	84.19	4.27
307.5	7.35	4.98	8.78	83.36	2.88

Depth (cm)	Age (ka)	Emi %	Gep %	Fp %	Other %
310.5	7.42	2.84	9.88	82.14	5.14
313.5	7.5	4.2	7.65	83.33	4.81
316.5	7.57	3.91	8.77	82.46	4.86
319.5	7.65	3.05	12.75	79.81	4.38
322.5	7.73	3.95	8.67	84.08	3.29
325.5	7.81	3.18	8.54	84.37	3.91
328.5	7.89	3.65	9.55	84.76	2.04
334.5	7.97	2.18	7.94	87.39	2.48
334.5	8.05	4.9	9.93	80.51	4.66
337.5	8.14	3.27	13.61	78.64	4.49
340.5	8.22	4.35	12.11	80.00	3.54
343.5	8.31	5.59	14.85	74.26	5.29
346.5	8.4	4.81	13.91	76.46	4.81
349.5	8.49	3.02	12.76	80.11	4.12
352.5	8.58	2.2	10.3	83.38	4.12
355.5	8.66	3.48	17.58	73.49	5.46
358.5	8.76	3.16	13.54	77.72	5.57
361.5	8.85	3.51	15.2	75.72	5.58
364.5	8.94	4.33	11.94	81.19	2.54
367.5	9.04	3.92	13.52	78.20	4.36
370.5	9.14	3.2	13.11	79.12	4.57
373.5	9.23	2.35	20.12	72.59	4.94
376.5	9.29	3.96	17.91	73.42	4.7
379.5	9.32	2.17	14.65	79.75	3.44
382.5	9.41	4.62	18.35	71.15	5.88
385.5	9.52	2.87	17.65	74.03	5.45
388.5	9.63	1.62	12.48	82.33	3.57
391.5	9.74	1.26	17.46	76.12	5.17
394.5	9.86	1.64	15.22	80.20	2.95
397.5	9.93	3.36	15.75	76.46	4.42
400.5	10	2.63	15.46	76.97	4.95
403.5	10.06	1.28	18.07	75.96	4.69
406.5	10.13	1.45	16.96	78.03	3.55
409.5	10.2	1.59	16.53	77.38	4.5

Depth (cm)	Age (ka)	Emi %	Gep %	Fp %	Other %
412.5	10.27	0.72	13.98	82.26	3.05
415.5	10.34	1.66	15.79	76.32	6.23
418.5	10.41	2.32	17.2	74.39	6.1
421.5	10.49	1.91	17.85	74.25	5.99
427.5	10.63	1.65	17.3	75.12	5.93
433.5	10.71	0.19	17.59	78.97	3.25
436.5	10.78	0.58	16.38	77.46	5.59
439.5	10.86	0.54	22.26	73.97	3.23
442.5	10.94	0.82	19.31	73.98	5.89
445.5	11.01	0.88	20.14	75.48	3.5
448.5	11.09	1.05	19.76	74.13	5.07
451.5	11.17	2.17	18.79	75.16	3.88
457.5	11.33	2.14	18.35	75.23	4.28
466.5	11.5	2.25	19.69	74.27	3.8
475.5	11.76	3.01	18.19	75.79	3.01
478.5	11.89	3.85	16.92	76.72	2.51
481.5	12.01	4.56	21.1	70.72	3.61
496.5	12.3	3.77	14.5	78.15	3.58
499.5	12.43	2.09	14.92	77.88	5.1
505.5	12.69	4.36	12.89	79.67	3.09
517.5	12.95	3.75	13.04	78.85	4.35
523.5	13.3	2.05	13.89	77.05	7.02
526.5	13.48	2.22	14.99	78.36	4.43
529.5	13.66	2.79	10.12	81.15	5.93
532.5	13.85	1.9	10.58	82.62	4.9
535.5	14.03	0.95	5.52	92.90	0.63
538.5	14.21	2.97	8.76	85.45	2.82
541.5	14.4	7.67	12.7	75.13	4.5
544.5	14.58	11.42	8.98	72.30	7.31
547.5	14.71	6.79	8.81	82.02	2.39
550.5	14.79	12.92	8.99	72.89	5.2
553.5	14.87	11.59	11.36	64.12	12.94
556.5	14.95	21.04	8.49	62.93	7.53
559.5	15.04	19.03	12.01	61.20	7.76

Depth (cm)	Age (ka)	Emi %	Gep %	Fp %	Other %
562.5	15.15	20	9.79	62.70	7.52
568.5	15.75	12.65	13.42	70.43	3.5
571.5	16.04	12.96	10.56	70.56	5.92
574.5	16.34	13.4	11.96	69.38	5.26
583.5	16.74	16.99	7.58	69.32	6.11
586.5	17.04	10.24	8.03	77.51	4.22
589.5	17.34	15.93	7.66	72.98	3.43
592.5	17.64	11.14	13.2	72.49	3.16
595.5	17.94	11.05	9.65	74.41	4.9
598.5	18.25	8.69	11.69	74.25	5.37
601.5	18.55	12.55	10.65	73.13	3.68
604.5	18.86	1.73	17.85	77.12	3.29
607.5	19.17	3.31	13.07	77.70	5.92
610.5	19.3	9.35	7.57	77.87	5.21
613.5	19.43	6.89	10.48	78.14	4.49
616.5	19.56	9.72	6.17	80.86	3.24
619.5	19.69	7.19	8.82	80.72	3.27
622.5	19.82	4.55	8.39	85.84	1.22
625.5	19.95	7.46	8.96	79.55	4.03
628.5	20.09	11.78	10.65	72.56	5.01
631.5	20.22	6.45	10.89	78.63	4.03
634.5	20.35	8.08	10.86	76.82	4.24
637.5	20.49	12.66	11.96	67.45	7.93
640.5	20.68	11.32	11.17	72.28	5.23
643.5	20.88	8.2	10.43	77.05	4.32
646.5	21.07	14.79	13.42	65.37	6.42
649.5	21.27	5.14	10.45	82.26	2.16
652.5	21.47	6.8	6.8	83.27	3.12
655.5	21.67	9.65	9.83	77.37	3.15
658.5	21.86	14.51	7.61	73.56	4.31
661.5	22.06	9.02	9.8	79.02	2.16
664.5	22.26	11.15	12.18	72.73	3.95
667.5	22.46	9.63	17.43	69.72	3.21
670.5	22.66	10.1	10.8	75.74	3.37

Depth (cm)	Age (ka)	Emi %	Gep %	Fp %	Other %
673.5	22.87	17.7	13.1	65.31	3.89
676.5	23.07	17.1	14.35	64.58	3.97
679.5	23.27	13.32	16.07	68.08	2.54
682.5	23.5	8.06	8.78	81.54	1.61
685.5	23.73	14.67	10.09	72.71	2.52
688.5	23.97	9.76	11.45	74.75	4.04
691.5	24.2	6.33	9.31	83.05	1.3
694.5	24.44	7.17	10.48	78.68	3.68
697.5	24.68	10.66	11.44	73.51	4.39
700.5	24.91	4.95	10.54	81.31	3.19
703.5	25.15	13.81	12.29	69.65	4.25
706.5	25.39	12.06	11.45	71.76	4.73
709.5	25.63	16.4	14.27	61.20	8.13