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Supplement of

Surfactant control of gas transfer velocity along an offshore coastal transect: results from a laboratory gas exchange tank

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Supplement

Table S1: Surfactant activity (normalized to Triton T-X-100), total CDOM absorbance (250-450 nm), $S_{275-295}$, $S_{350-400}$, S_R , $E_2 : E_3$: E_3 ratio and SA enrichment factor (EF) of the sea surface microlayer (SML) from a North Sea transect during 2012-2013.

Date	Dove Station	SML SA mg l ⁻¹ T-X-100	SML CDOM ₂₅₀₋₄₅₀ Total a	SML $S_{275-295}$ nm ⁻¹	SML $S_{350-400}$ nm ⁻¹	SML S_R	SML $E_2 : E_3$	SA EF
04/10/12	1	0.27 ±0.03	874.8 ±37.6	0.013 ±0.001	0.010 ±0.001	1.32 ±0.01	3.580 ±0.250	1.44 ±0.40
04/10/12	2	0.22 ±0.08	429.0 ±156.7	0.016 ±0.002	0.008 ±0.004	1.99 ±0.01	4.291 ±1.026	1.90 ±0.71
04/10/12	3	0.17 ±0.03	240.4 ±6.8	0.021 ±0.001	0.014 ±0.001	1.54 ±0.01	6.832 ±0.208	1.5 ±0.28
04/10/12	4	0.15 ±0.02	250.6 ±12.8	0.021 ±0.001	0.013 ±0.001	1.62 ±0.01	6.584 ±0.177	1.33 ±0.20
04/10/12	5	0.14 ±0.02	261.1 ±33.3	0.020 ±0.001	0.012 ±0.001	1.73 ±0.01	6.009 ±0.385	1.19 ±0.21
13/02/13	1	0.11 ±0.01	637 ±158.5	0.010 ±0.002	0.005 ±0.003	1.91 ±0.01	2.459 ±0.561	0.89 ±0.12
13/02/13	2	0.08 ±0.01	339.1 ±12.8	0.014 ±0.001	0.008 ±0.001	1.74 ±0.01	3.847 ±0.062	0.75 ±0.17
13/02/13	3	0.13 ±0.03	452.1 ±12.2	0.013 ±0.001	0.009 ±0.001	1.51 ±0.01	3.556 ±0.132	1.28 ±0.34
13/02/13	4	0.10 ±0.01	326.0 ±23.8	0.016 ±0.001	0.009 ±0.001	1.71 ±0.01	4.179 ±0.205	1.11 ±0.22
13/02/13	5	0.11 ±0.03	322.6 ±14.3	0.016 ±0.001	0.011 ±0.001	1.47 ±0.01	4.236 ±0.109	1.04 ±0.36
10/06/13	1	0.30 ±0.03	379.0 ±10.8	0.020 ±0.001	0.011 ±0.001	1.85 ±0.01	5.849 ±0.124	1.08 ±0.13
10/06/13	2	0.29 ±0.01	409.8 ±41.9	0.019 ±0.001	0.011 ±0.001	1.74 ±0.01	5.640 ±0.206	1.07 ±0.04
10/06/13	3	0.30 ±0.01	328.5 ±11.7	0.020 ±0.001	0.012 ±0.001	1.71 ±0.01	6.188 ±0.086	1.08 ±0.07
10/06/13	4	0.28 ±0.01	400.5 ±10.5	0.016 ±0.001	0.015 ±0.001	1.11 ±0.01	5.162 ±0.055	1.09 ±0.05
10/06/13	5	0.25 ±0.01	326.9 ±13.2	0.018 ±0.001	0.014 ±0.001	1.29 ±0.01	5.832 ±0.067	1.05 ±0.02
17/07/13	1	0.38 ±0.04						1.51 ±0.18
17/07/13	2	0.25 ±0.05						1.00 ±0.20
17/07/13	3	0.28 ±0.05						1.09 ±0.18
17/07/13	4							
17/07/13	5							

Table S3: k_{660} and R_{660} estimates for three water-side turbulence settings of 0.6, 0.7 and 0.75 Hz from North East coast transect 2012-2013

Date	Dove Station	CH ₄ k_{660}			CH ₄ R_{660}		
		0.6 Hz	0.7 Hz	0.75 Hz	0.6 Hz	0.7 Hz	0.75 Hz
04/10/12	1	9.58 ±0.52	11.21 ±0.45	11.40 ±0.28	0.60 ±0.03	0.70 ±0.03	0.72 ±0.02
04/10/12	2	9.39 ±0.48	11.51 ±0.46	11.02 ±0.26	0.59 ±0.03	0.72 ±0.03	0.69 ±0.02
04/10/12	3	9.58 ±0.52	12.62 ±0.52	11.25 ±0.29	0.60 ±0.03	0.79 ±0.03	0.71 ±0.02
04/10/12	4	10.50 ±0.40	12.32 ±0.49	10.66 ±0.31	0.66 ±0.02	0.77 ±0.03	0.67 ±0.02
04/10/12	5	12.25 ±0.55	13.59 ±0.57	12.77 ±0.34	0.77 ±0.03	0.85 ±0.04	0.80 ±0.02
13/02/13	1	12.17 ±0.56	12.79 ±0.55	12.72 ±0.35	0.76 ±0.04	0.80 ±0.03	0.80 ±0.02
13/02/13	2						
13/02/13	3	12.68 ±0.66	13.67 ±0.56	11.16 ±0.42	0.80 ±0.04	0.86 ±0.04	0.70 ±0.03
13/02/13	4	10.97 ±0.46	13.21 ±0.53	12.55 ±0.34	0.69 ±0.03	0.83 ±0.03	0.79 ±0.02
13/02/13	5	13.04 ±0.51	13.6 ±0.54	13.11 ±0.37	0.82 ±0.03	0.85 ±0.03	0.82 ±0.02
10/06/13	1	8.17 ±0.37	9.05 ±0.40	8.70 ±0.44	0.51 ±0.02	0.57 ±0.02	0.55 ±0.03
10/06/13	2	7.77 ±0.33	8.93 ±0.37	8.65 ±0.25	0.49 ±0.02	0.56 ±0.02	0.54 ±0.02
10/06/13	3	8.02 ±0.33	10.46 ±0.43	11.54 ±0.42	0.50 ±0.02	0.66 ±0.03	0.72 ±0.03
10/06/13	4						
10/06/13	5	9.51 ±0.38	10.52 ±0.44	9.83 ±0.26	0.60 ±0.02	0.66 ±0.03	0.62 ±0.02
17/07/13	1	9.71 ±0.41	10.92 ±0.47	10.13 ±0.36	0.61 ±0.03	0.69 ±0.03	0.64 ±0.02
17/07/13	2	10.29 ±0.54	9.94 ±0.47	9.50 ±0.24	0.65 ±0.03	0.62 ±0.03	0.60 ±0.02
17/07/13	3	10.02 ±0.62	11.15 ±0.48	7.91 ±3.90	0.63 ±0.04	0.70 ±0.03	0.50 ±0.02
17/07/13	4						
17/07/13	5						