

Supplement of Biogeosciences, 13, 2453–2473, 2016  
<http://www.biogeosciences.net/13/2453/2016/>  
doi:10.5194/bg-13-2453-2016-supplement  
© Author(s) 2016. CC Attribution 3.0 License.



Biogeosciences  Open Access

*Supplement of*

## **Changes in optical characteristics of surface microlayers hint to photochemically and microbially mediated DOM turnover in the upwelling region off the coast of Peru**

**Luisa Galgani and Anja Engel**

*Correspondence to:* Anja Engel (aengel@geomar.de)

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

**Table S1. (a). Absorption coefficients  $a(325)$  [ $\text{m}^{-1}$ ], spectral slopes  $S(275-295)$ , [ $\text{nm}^{-1}$ ], DOC [ $\text{mg L}^{-1}$ ] and specific UV absorption at 254 nm  $\text{SUVA}_{254}$  [ $\text{mg C L}^{-1} \text{m}^{-1}$ ] in the ULW.**

Station	Sample	$a(325)[\text{m}^{-1}]$	$S(275-295)[\text{nm}^{-1}]$	DOC[ $\text{mg L}^{-1}$ ]	$\text{SUVA}_{254}[\text{mg C L}^{-1} \text{m}^{-1}]$
S1	ulw	0.28	0.025	1.01	0.46
S2	ulw	0.21	0.034	0.83	0.65
S2_2	ulw	0.30	0.029	0.84	0.66
S3	ulw	0.37	0.029	0.92	0.73
S4	ulw	0.44	0.027	0.91	0.96
S4_2	ulw	0.39	0.029	0.73	1.00
S6	ulw	0.30	0.028	0.81	0.71
S7	ulw	0.71	0.021	0.84	1.15
S7_2	ulw	0.32	0.031	0.76	0.90
S8	ulw	1.01	0.017	1.11	0.95
S9	ulw	0.32	0.031	1.06	0.64
S9_2	ulw	0.39	0.029	1.12	0.69
S10_1	ulw	1.01	0.025	0.92	1.10
S10_2	ulw	1.47	0.022	0.96	0.99
S10_3	ulw	0.97	0.026	0.95	1.10
S10_4	ulw	1.24	0.028	1.16	1.14
S11	ulw	0.30	0.023	0.81	1.21
S12_1	ulw	0.12	0.037	0.94	0.68
S12_2	ulw	0.07	0.043	0.88	0.63
S12_3	ulw	0.14	0.035	0.89	0.72
S13_1	ulw	0.14	0.030	0.87	0.78
S13_2	ulw	0.09	0.035	0.89	0.68
S13_3	ulw	0.21	0.028	1.09	0.72
S14_1	ulw	0.37	0.022	1.14	0.82
S14_2	ulw	0.35	0.025	1.17	0.84
S15_1	ulw	0.23	0.025	1.13	0.69
S15_2	ulw	0.32	0.024	1.24	0.79
S15_3	ulw	0.37	0.020	1.36	0.72
S16_1	ulw	0.35	0.023	0.95	1.01
S16_2	ulw	0.32	0.024	1.03	0.85
S16_3	ulw	0.30	0.025	1.05	0.82
S17_1	ulw	0.21	0.029	1.28	0.59
S17_2	ulw	0.28	0.026	1.15	0.78
S19	ulw	0.16	0.032	1.16	0.57
S19_2	ulw	0.12	0.037	1.05	0.63
S20	ulw	0.09	0.038	1.09	0.50
S20_2	ulw	0.07	0.040	1.19	0.49
#1778	ulw	0.07	0.040	1.09	0.53

**Table S1. (b). Absorption coefficients  $a(325)$  [ $m^{-1}$ ], spectral slopes  $S(275-295)$ , [ $nm^{-1}$ ], DOC [ $mg L^{-1}$ ] and specific UV absorption at 254 nm  $SUVA_{254}$  [ $mg C L^{-1} m^{-1}$ ] in the SML.**

Station	Sample	$a(325)[m^{-1}]$	$S(275-295)[nm^{-1}]$	DOC[ $mg L^{-1}$ ]	$SUVA_{254}[mg C L^{-1} m^{-1}]$
S1	sml	0.37	0.021	1.22	0.49
S2	sml	0.35	0.029	0.90	0.89
S2_2	sml	0.76	0.020	1.01	1.00
S3	sml	0.41	0.030	0.99	0.84
S4	sml	0.41	0.032	0.96	0.91
S4_2	sml	0.44	0.027	0.96	0.91
S6	sml	0.41	0.027	0.90	0.82
S7	sml	0.37	0.029	0.86	0.96
S7_2	sml	0.41	0.032	0.97	1.05
S8	sml	0.37	0.033	1.05	0.99
S9	sml	0.46	0.031	1.49	0.70
S9_2	sml	0.35	0.034	1.41	0.77
S10_1	sml	1.11	0.028	1.15	1.15
S10_2	sml	1.24	0.030	1.25	1.36
S10_3	sml	1.15	0.034	1.02	1.74
S10_4	sml	1.47	0.029	1.39	1.26
S11	sml	0.12	0.038	0.90	0.91
S12_1	sml	0.12	0.036	0.97	0.68
S12_2	sml	0.09	0.038	0.95	0.70
S12_3	sml	0.23	0.029	0.96	0.89
S13_1	sml	0.09	0.036	0.96	0.67
S13_2	sml	0.14	0.031	0.97	0.76
S13_3	sml	0.18	0.029	1.14	0.74
S14_1	sml	0.44	0.024	1.20	0.95
S14_2	sml	0.48	0.020	1.21	1.02
S15_1	sml	0.37	0.025	1.26	0.86
S15_2	sml	0.35	0.024	1.25	0.86
S15_3	sml	1.01	0.012	1.47	1.10
S16_1	sml	0.32	0.024	1.07	0.84
S16_2	sml	0.37	0.024	1.13	0.90
S16_3	sml	0.35	0.025	1.15	0.89
S17_1	sml	0.25	0.026	1.24	0.74
S17_2	sml	0.23	0.030	1.28	0.70
S19	sml	0.14	0.034	1.20	0.60
S19_2	sml	0.30	0.025	1.27	0.74
S20	sml	0.23	0.031	1.26	0.59
S20_2	sml	0.12	0.036	1.34	0.54
#1778	sml	0.09	0.037	1.20	0.55

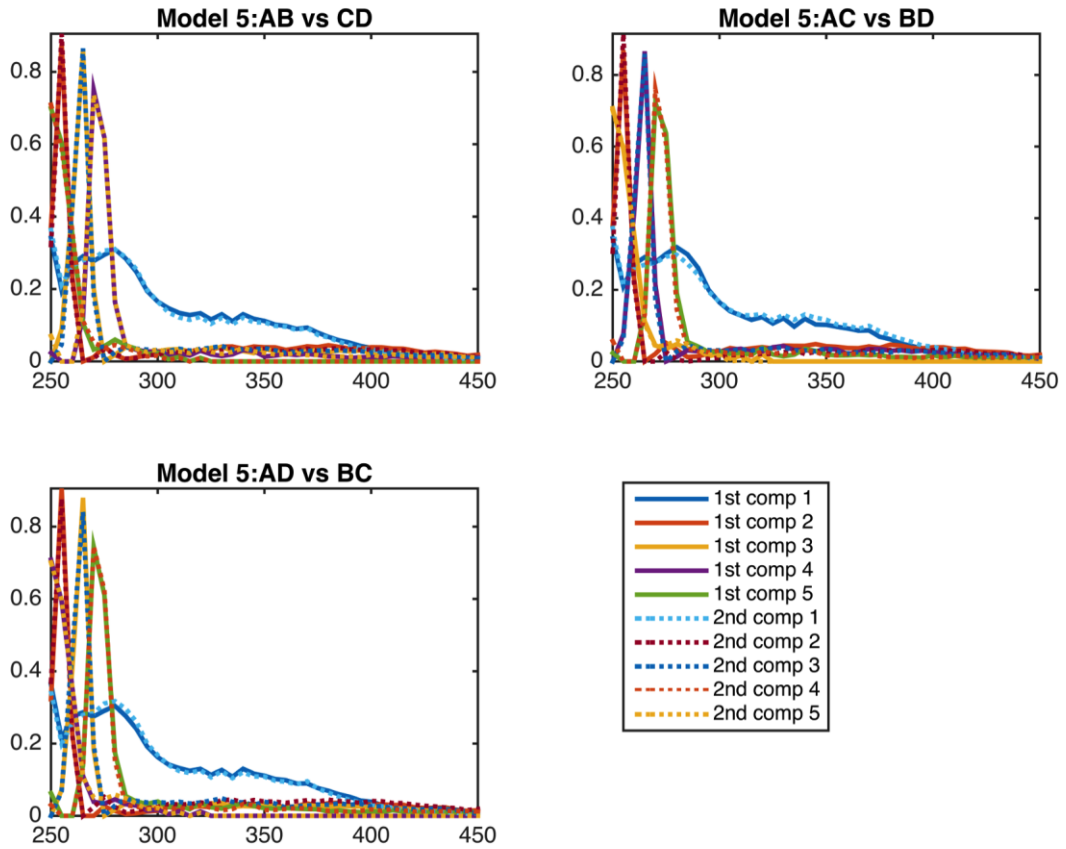


Figure S1. 5-components model validation for multiple comparisons - excitation.

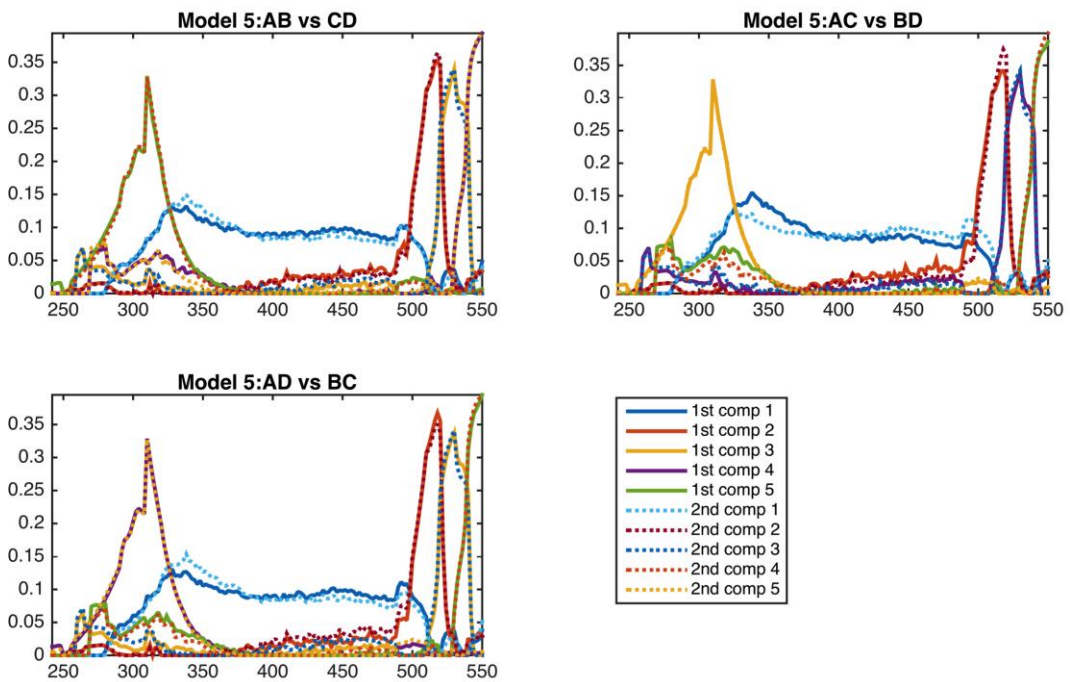
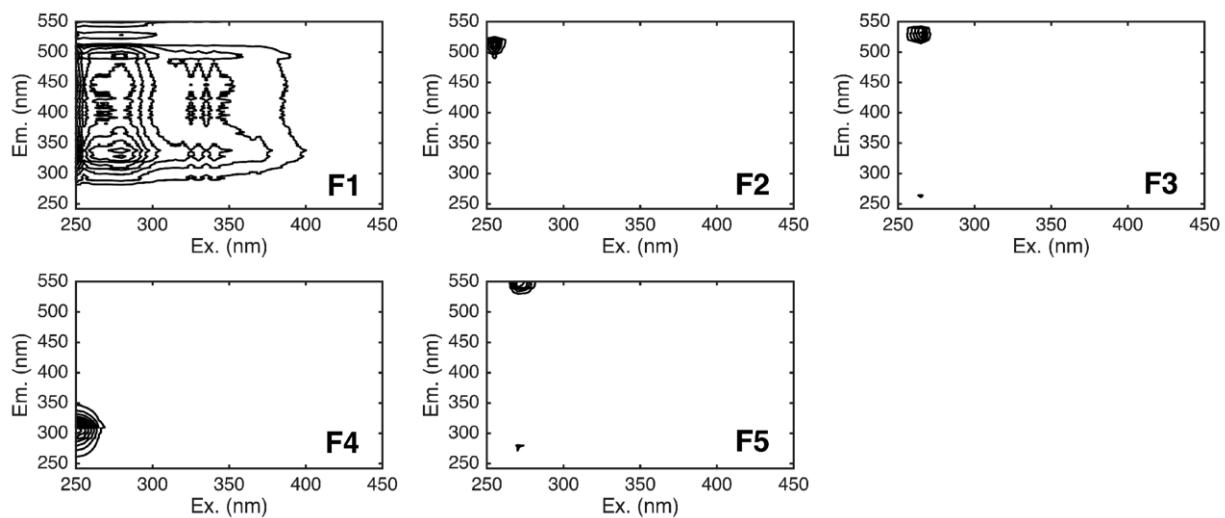


Figure S2. 5-components model validation for multiple comparisons - emission.



**Figure S3. Contour plots of the five fluorescent components identified in this study, visualized with their excitation/emission ranges in the full spectrum.**