(A)

	TempA	Wind_X	Wind_Y	UVA	UVB	PAR	Chla
PAR							−0.4
UVB						0.95	−0.44
UVA					0.98	0.93	−0.41
Wind_Y				−0.16	−0.17	−0.22	−0.08
Wind_X			0.1	0.29	0.3	0.2	−0.1
TempA		0.15	−0.18	0.65	0.73	0.6	−0.45
TempW	0.94	0.19	−0.15	0.52	0.61	0.48	−0.48

(B)

	a_{254}	a_{325}	$a_{254/365}$	$S_{275-295}$	S_R	$SUVA_{254}$
S_R						−0.12
$S_{275-295}$					−0.28	0.27
$a_{254/365}$				−0.35	−0.19	0.22
a_{325}			−0.47	0.75	−0.12	0.5
a_{254}		0.79	0.06	0.52	−0.24	0.77
DOC	−0.04	0.13	−0.3	0.13	−0.11	−0.64

(C)

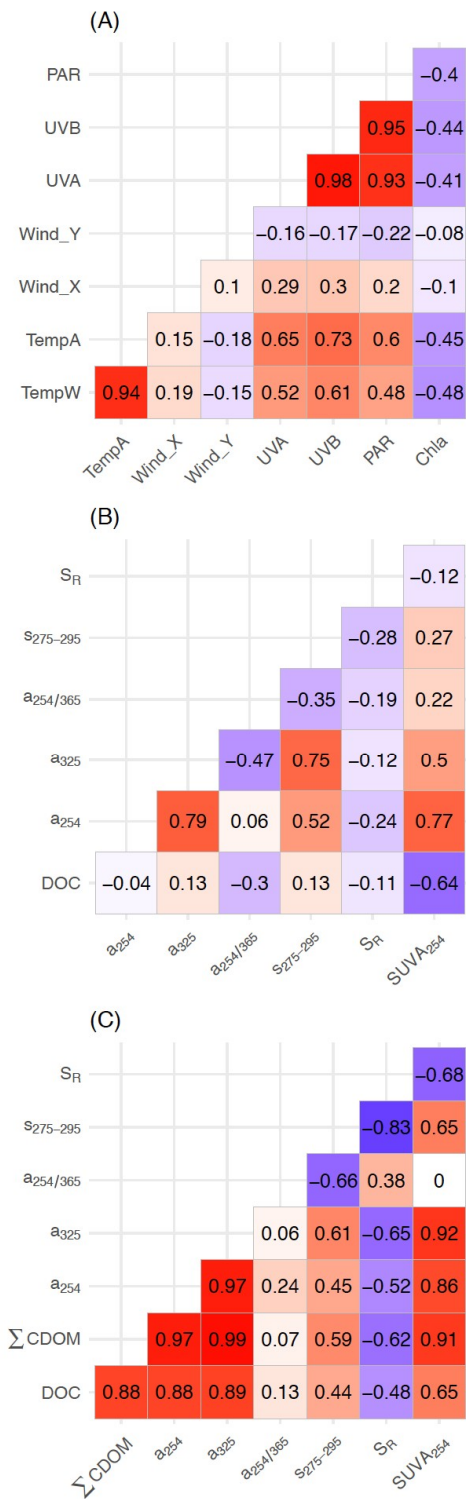|	$\sum CDOM$	a_{254}	a_{325}	$a_{254/365}$	$S_{275-295}$	S_R	$SUVA_{254}$
S_R							−0.68
$S_{275-295}$						−0.83	0.65
$a_{254/365}$					−0.66	0.38	0
a_{325}				0.06	0.61	−0.65	0.92
a_{254}			0.97	0.24	0.45	−0.52	0.86
$\sum CDOM$		0.97	0.99	0.07	0.59	−0.62	0.91
DOC	0.88	0.88	0.89	0.13	0.44	−0.48	0.65

Figure S1. Correlation matrices of the environmental and CDOM variables used in this work: (A) PAR radiation, UVB and UVA radiation, wind components (Wind_Y, Wind_X), air and seawater temperature (TempA, TempW) and Chl *a* at Cap Ses Salines; and DOC, $\Sigma\Delta a_\lambda$, a_{254}, a_{325}, $a_{254/365}$, $S_{275-295}$, S_R at Cap Ses Salines (B) and at Es Caragol beach (C).
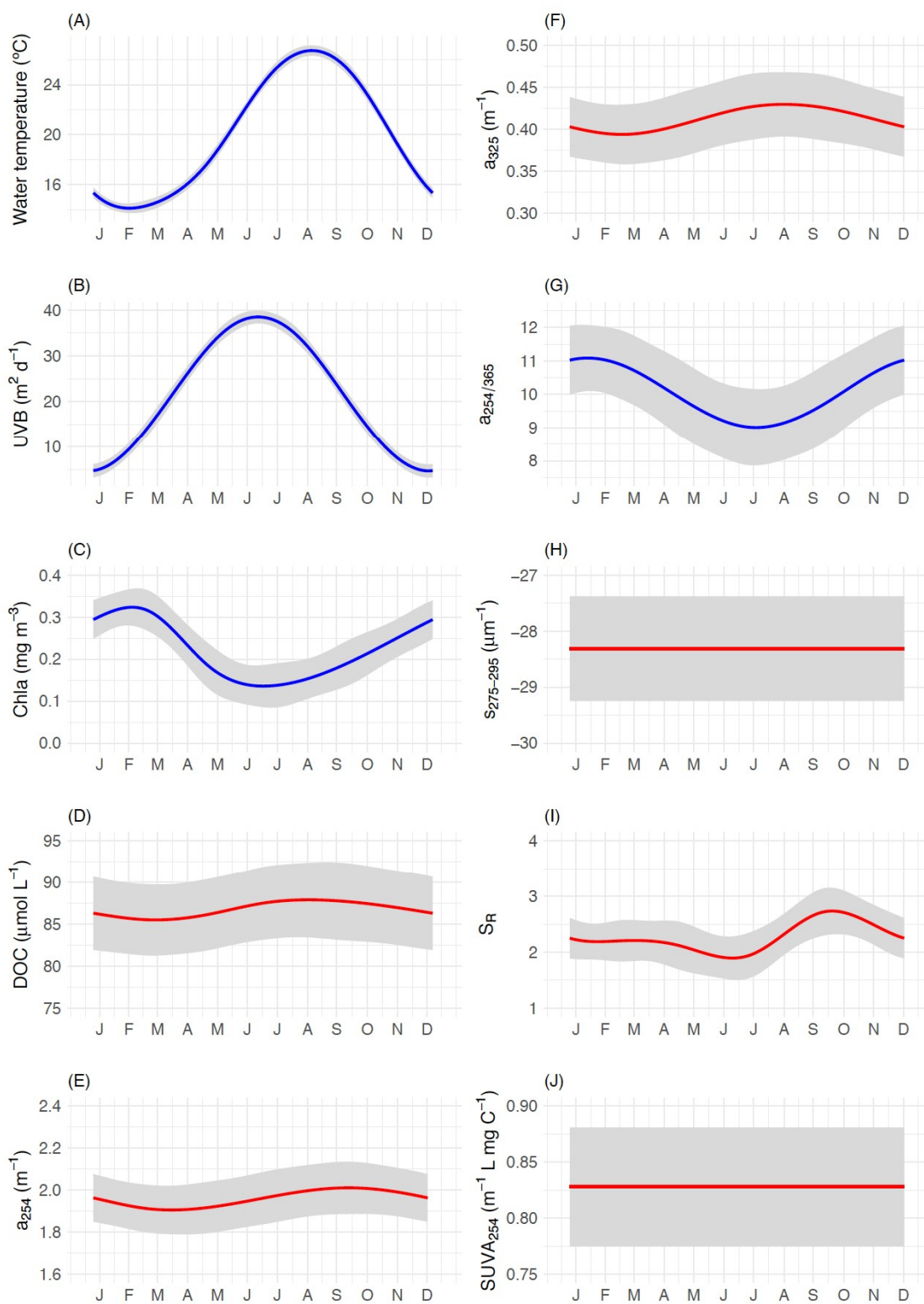
Figure S2. Generalized Additive Modeling of the seasonal cycles of seawater temperature (TempW) (A), UVB radiation (B), Chl *a* (C), DOC (D), a_{254} (E), a_{325} (F), $a_{254/365}$ (G), $S_{275-295}$ (H), S_R (I) and $SUVA_{254}$ (J) at Cap Ses Salines.
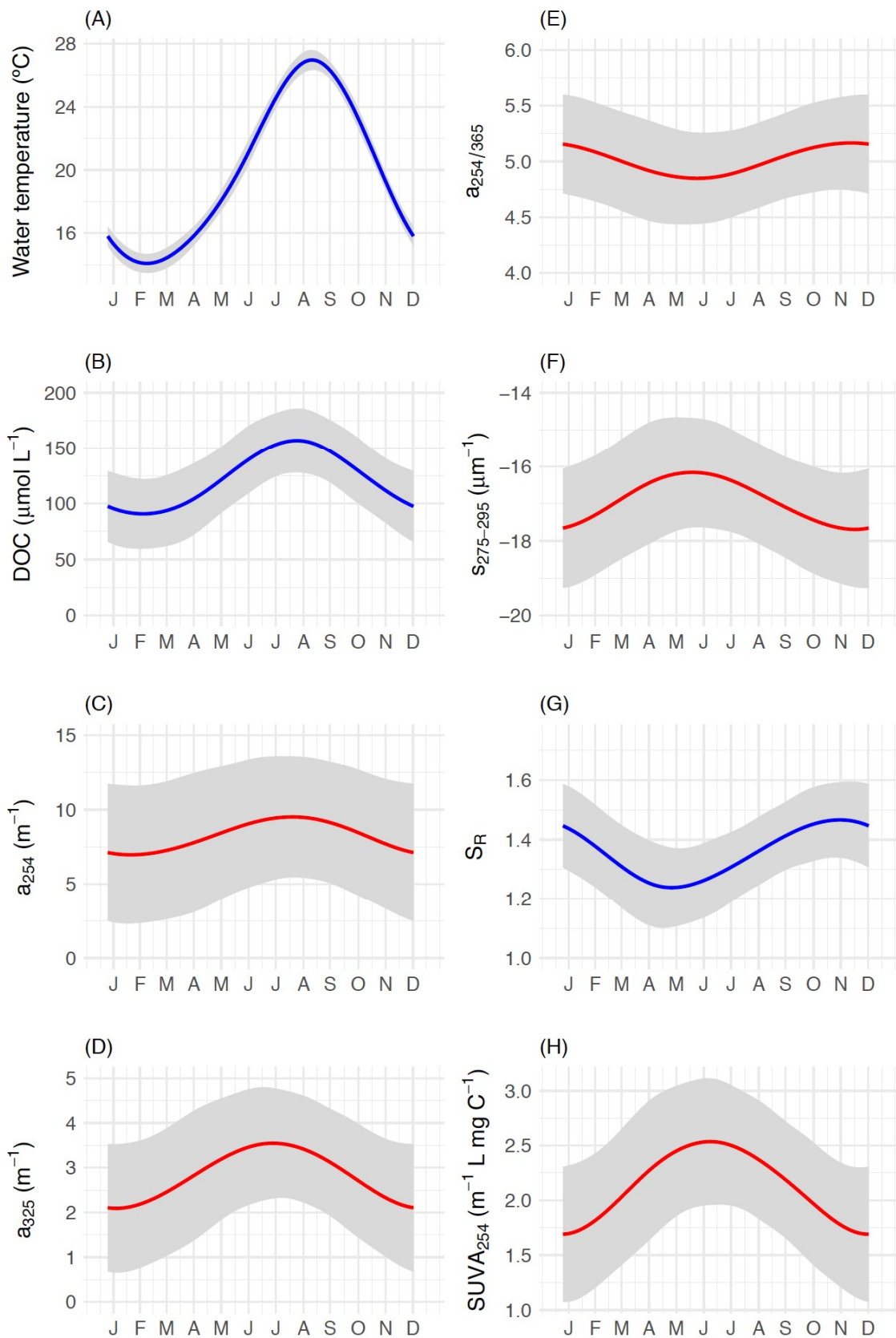
Figure S3. Generalized Additive Modelling of the seasonal cycles of seawater temperature (TempW) (A), DOC (B), a_{254} (C), a_{325} (D), $a_{254/365}$ (E), $S_{275-295}$ (F), S_R (G) and $SUVA_{254}$ (H) at Es Caragol beach.
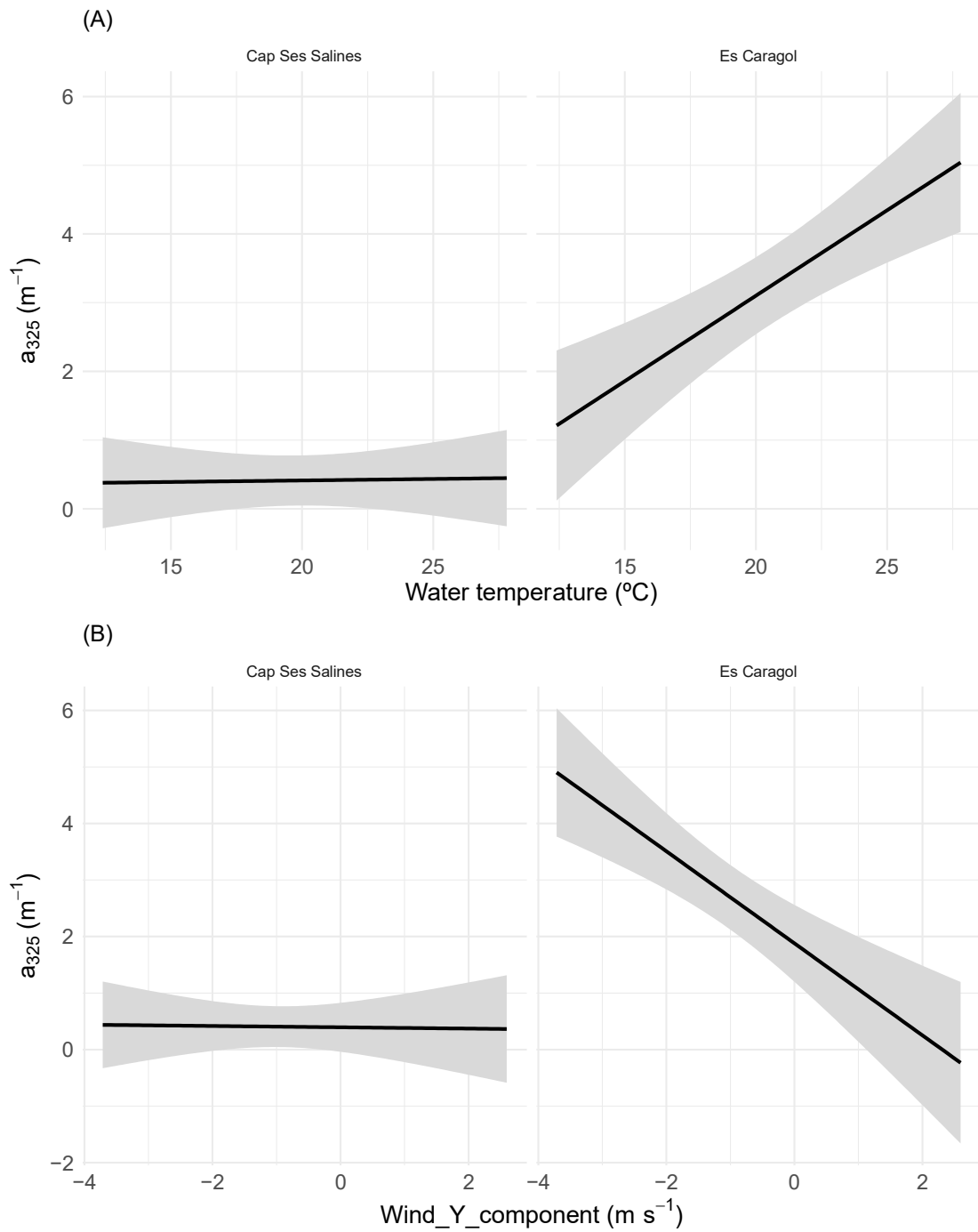
Figure S4. Analysis of covariance (ANCOVA) models fitted to CDOM quantity (a_{325}) with seawater temperature (A) and Wind Y component (B) at site 1 (left panels) and site 2 (right panels).
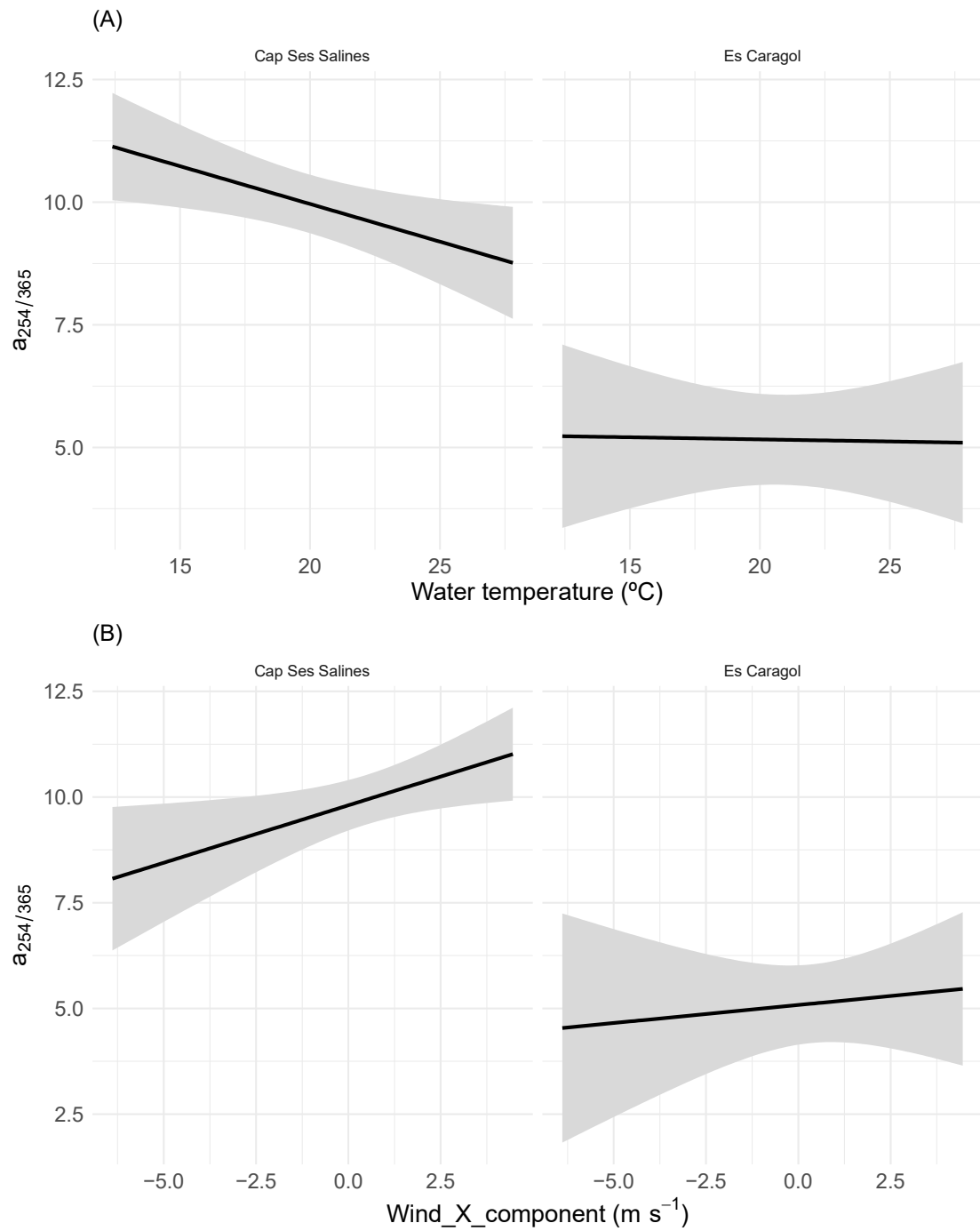
Figure S5. Analysis of covariance (ANCOVA) models fitted to CDOM quality ($a_{254/365}$) quality of CDOM with seawater temperature (A) and Wind X component (B) at site 1 (left panels) and site 2 (right panels).

Table S1. Results of the Generalized Additive Models (GAMs) fitted to optical and environmental variables at site 1 Cap Ses Salines. EDF = Estimated Degrees of Freedom. DoY = Day of the Year. See the main text for the parameters names.

Variable	Estimate (± SE)	EDF	t-value	F-value	P-value
TempW (n = 76)					
Intercept	19.4 (0.1)		194.2		<0.0001
DoY		3.836		538	<0.0001
R^2_{adj} = 0.966					
UVB (n = 65)					
Intercept	21.8 (0.4)		58.3		<0.0001
DoY		3.363		296.1	<0.0001
R^2_{adj} = 0.95					
Chl a (n = 76)					
Intercept	0.23 (0.01)		18.72		<0.0001
DoY		2.973		8.276	<0.0001
R^2_{adj} = 0.302					
DOC (n = 61)					
Intercept	86.7 (1.7)		50.26		<0.0001
DoY		0.6497		0.216	0.267
R^2_{adj} = 0.0139					
a_{254} (n = 71)					
Intercept	1.96 (0.04)		45.69		<0.0001
DoY		0.9697		0.42	0.175
R^2_{adj} = 0.0235					
a_{325} (n = 71)					
Intercept	0.41 (0.01)		30.74		<0.0001
DoY		1.003		0.5	0.134
R^2_{adj} = 0.0286					
$a_{254/365}$ (n = 71)					
Intercept	10.2 (0.3)		29.72		<0.0001
DoY		1.576		1.745	<0.01
R^2_{adj} = 0.0965					
$S_{275-295}$ (n = 71)					
Intercept	-0.0283 (0.005)		-59.45		<0.0001
DoY		1.94e-06		0	0.593
R^2_{adj} = 2.63e-09					
S_R (n = 71)					
Intercept	2.25 (0.09)		23.74		<0.0001
DoY		3.052		1.874	0.0579
R^2_{adj} = 0.0792					
$SUVA_{254}$ (n = 57)					
Intercept	0.83 (0.03)		30.63		<0.0001
DoY		8.36e-11		0	0.847
R^2_{adj} = -8.72e-13					

Table S2. Results of the Generalized Additive Models (GAMs) fitted to optical and environmental variables at site 2 Es Caragol beach. EDF = Estimated Degrees of Freedom. DoY = Day of the Year. See the main text for the parameters names.

Variable	Estimate (±SE)	EDF	t-value	F-value	P-value
TempW (n = 31)					
Intercept	20.1 (0.1)		138		<0.0001
DoY		3.707		247.6	<0.0001
R^2_{adj} = 0.971					
DOC (n = 37)					
Intercept	125.7 (9.2)		13.71		<0.0001
DoY		1.777		2.104	<0.001
R^2_{adj} = 0.197					
a_{254}					
Intercept	8.5 (1.7)		4.912		<0.0001
DoY		0.225		0.225	0.246
n = 37					
R^2_{adj} = 0.0248					
a_{325}					
Intercept	2.95 (0.46)		6.45		<0.0001
DoY		1.11		0.595	0.122
n = 37					
R^2_{adj} = 0.0638					
$a_{254/365}$ (n = 37)					
Intercept	5.00 (0.16)		32.14		<0.0001
DoY		0.8071		0.333	0.199
R^2_{adj} = 0.0365					
$S_{275-295}$ (n = 37)					
Intercept	-0.01689 (0.0005)		-32.52		<0.0001
DoY		1.384		0.671	0.147
R^2_{adj} = 0.0623					
S_R (n = 37)					
Intercept	1.36 (0.04)		34.27		<0.0001
DoY		1.65		1.372	0.037
R^2_{adj} = 0.134					
$SUVA_{254}$ (n = 34)					
Intercept	2.16 (0.19)		11.46		<0.0001
DoY		1.428		0.958	0.0721
R^2_{adj} = 0.105					

Table S3. Coefficients for the Analysis of covariance (ANCOVA) models fitted to the indices (A) a_{325} and (B) $a_{254/365}$.

(A) a_{325}

Parameter	Estimate	S.E.	t-value	P-value
Intercept	0.310	0.757	0.410	0.6828
Site (Es Caragol)	−3.197	1.452	−2.202	0.0303
Temp_W	0.004	0.038	0.117	0.9074
Wind_Y_component	−0.012	0.124	−0.093	0.9258
Site (Es Caragol) × Temp_W	0.244	0.069	3.524	0.0007
Site (Es Caragol) × Wind_Y_component	−0.803	0.221	−3.636	0.0005
N = 94				
$R^2 = 0.54$				

(B) $a_{254/365}$

Parameter	Estimate	S.E.	t-value	P-value
Intercept	12.756	1.240	10.289	<0.0001
Site (Es Caragol)	−7.512	2.381	−3.154	0.0022
Temp_W	−0.154	0.062	−2.496	0.0144
Wind_X_component	0.272	0.117	2.323	0.0225
Site (Es Caragol) × Temp_W	0.145	0.116	1.258	0.2117
Site (Es Caragol) × Wind_X_component	−0.186	0.223	−0.834	0.4063
N = 94				
$R^2 = 0.50$				

Image S1: Comparison of Es Caragol beach geomorphology during the two years monitored: with banquettes on May 2013 (right image) and without (left image) on May 2014.