

Supplement of Ocean Sci., 13, 411–426, 2017
<http://www.ocean-sci.net/13/411/2017/>
doi:10.5194/os-13-411-2017-supplement
© Author(s) 2017. CC Attribution 3.0 License.



Supplement of

Coastal ocean acidification and increasing total alkalinity in the northwestern Mediterranean Sea

Lydia Kapsenberg et al.

Correspondence to: Jean-Pierre Gattuso (gattuso@obs-vlfr.fr)

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

1 **Data Supplement**

2

3 **Table S1.** Climatological monthly means \pm SD (*N*) for carbonate chemistry parameters at Point
 4 B, at 1 and 50 m for the period 2007-2015, for salinity (*S*), temperature (*T*), dissolved inorganic
 5 carbon (*C_T*), total alkalinity (*A_T*), pH (*pH_T*, total hydrogen ion scale), *pCO₂*, and aragonite
 6 saturation state (Ω_a).

<i>Month</i>	<i>S</i>	<i>T</i> (°C)	<i>C_T</i> ($\mu\text{mol kg}^{-1}$)	<i>A_T</i> ($\mu\text{mol kg}^{-1}$)	<i>pH_T</i>	<i>pCO₂</i> (μatm)	Ω_a
1 m							
Jan	37.89 \pm 0.42 (38)	14.38 \pm 0.76 (36)	2251 \pm 8 (38)	2551 \pm 10 (38)	8.13 \pm 0.01 (36)	346 \pm 10 (36)	3.19 \pm 0.09 (36)
Feb	37.95 \pm 0.23 (32)	13.58 \pm 0.41 (32)	2259 \pm 11 (32)	2555 \pm 8 (32)	8.14 \pm 0.01 (32)	343 \pm 10 (32)	3.14 \pm 0.06 (32)
Mar	37.86 \pm 0.25 (35)	13.67 \pm 0.49 (35)	2259 \pm 10 (35)	2555 \pm 8 (35)	8.14 \pm 0.01 (35)	344 \pm 10 (35)	3.14 \pm 0.06 (35)
Apr	37.76 \pm 0.24 (34)	15.04 \pm 1.08 (34)	2254 \pm 11 (34)	2553 \pm 9 (34)	8.12 \pm 0.02 (34)	357 \pm 16(34)	3.19 \pm 0.08 (34)
May	37.64 \pm 0.26 (37)	18.08 \pm 1.31 (37)	2241 \pm 20 (37)	2547 \pm 17 (37)	8.09 \pm 0.02 (37)	390 \pm 21 (37)	3.31 \pm 0.09 (37)
Jun	37.74 \pm 0.17 (37)	21.29 \pm 1.77 (37)	2233 \pm 18 (37)	2543 \pm 14 (37)	8.05 \pm 0.02 (37)	436 \pm 29 (37)	3.41 \pm 0.11 (37)
Jul	37.93 \pm 0.17 (40)	24.06 \pm 1.55 (40)	2227 \pm 14 (40)	2549 \pm 13 (40)	8.02 \pm 0.03 (40)	469 \pm 33 (40)	3.57 \pm 0.10 (40)
Aug	38.08 \pm 0.12 (30)	24.77 \pm 1.35 (30)	2226 \pm 14 (30)	2555 \pm 10 (30)	8.02 \pm 0.03 (30)	471 \pm 37 (30)	3.65 \pm 0.10 (30)
Sep	38.21 \pm 0.11 (32)	23.48 \pm 1.23 (31)	2229 \pm 10 (31)	2562 \pm 9 (32)	8.04 \pm 0.03 (30)	443 \pm 33 (30)	3.66 \pm 0.09 (30)
Oct	38.19 \pm 0.10 (33)	20.82 \pm 1.09 (33)	2226 \pm 10 (33)	2561 \pm 9 (33)	8.08 \pm 0.02 (33)	394 \pm 18 (33)	3.63 \pm 0.08 (33)
Nov	37.99 \pm 0.27 (37)	18.20 \pm 0.99 (36)	2230 \pm 13 (37)	2555 \pm 12 (37)	8.11 \pm 0.01 (36)	366 \pm 14 (36)	3.48 \pm 0.07 (36)
Dec	37.97 \pm 0.25 (32)	16.14 \pm 1.12 (32)	2241 \pm 12 (32)	2555 \pm 12 (32)	8.13 \pm 0.02 (32)	352 \pm 16 (32)	3.35 \pm 0.06 (32)
50 m							
Jan	38.02 \pm 0.11 (37)	14.49 \pm 0.71 (35)	2253 \pm 9 (37)	2554 \pm 6 (37)	8.13 \pm 0.01 (35)	347 \pm 10 (35)	3.18 \pm 0.07 (35)
Feb	38.03 \pm 0.10 (32)	13.71 \pm 0.43 (32)	2259 \pm 11(32)	2556 \pm 7 (32)	8.13 \pm 0.01 (32)	343 \pm 9 (32)	3.12 \pm 0.06 (32)
Mar	38.01 \pm 0.12 (35)	13.59 \pm 0.39 (35)	2260 \pm 9 (35)	2554 \pm 8 (35)	8.13 \pm 0.01 (35)	346 \pm 9 (35)	3.09 \pm 0.05 (35)
Apr	37.98 \pm 0.10 (34)	14.06 \pm 0.57 (34)	2258 \pm 11 (34)	2553 \pm 8 (34)	8.12 \pm 0.01 (34)	351 \pm 11 (34)	3.10 \pm 0.08 (34)
May	37.99 \pm 0.11 (37)	15.01 \pm 0.85 (37)	2253 \pm 16 (37)	2551 \pm 10 (37)	8.12 \pm 0.02 (37)	360 \pm 16 (37)	3.15 \pm 0.10 (37)
Jun	38.00 \pm 0.09 (37)	15.06 \pm 0.59 (37)	2249 \pm 16 (37)	2548 \pm 11 (37)	8.12 \pm 0.01 (37)	358 \pm 12 (37)	3.16 \pm 0.08 (37)
Jul	38.01 \pm 0.07 (39)	15.43 \pm 1.12 (39)	2246 \pm 14 (39)	2546 \pm 9 (39)	8.11 \pm 0.02 (39)	363 \pm 21 (39)	3.16 \pm 0.10 (39)
Aug	37.99 \pm 0.07 (28)	15.27 \pm 0.66 (28)	2240 \pm 10 (28)	2543 \pm 8 (28)	8.12 \pm 0.01 (28)	353 \pm 12 (28)	3.20 \pm 0.07 (28)
Sep	38.00 \pm 0.11 (32)	16.20 \pm 1.69 (31)	2237 \pm 13 (31)	2547 \pm 11 (32)	8.12 \pm 0.02 (30)	357 \pm 22 (30)	3.29 \pm 0.17 (30)
Oct	38.11 \pm 0.13 (33)	18.49 \pm 1.83 (33)	2233 \pm 12 (33)	2554 \pm 12 (33)	8.10 \pm 0.02 (33)	377 \pm 21 (33)	3.43 \pm 0.15 (33)
Nov	38.09 \pm 0.11 (36)	17.95 \pm 1.19 (35)	2234 \pm 14 (36)	2557 \pm 9 (36)	8.11 \pm 0.02 (35)	366 \pm 15 (35)	3.43 \pm 0.12 (35)
Dec	38.04 \pm 0.16 (32)	16.20 \pm 1.10 (32)	2241 \pm 11 (32)	2556 \pm 9 (32)	8.12 \pm 0.02 (32)	352 \pm 14 (32)	3.33 \pm 0.08 (32)

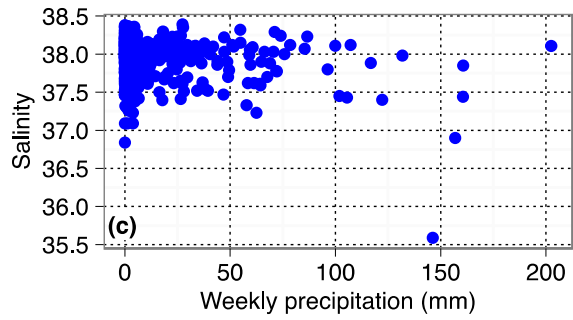
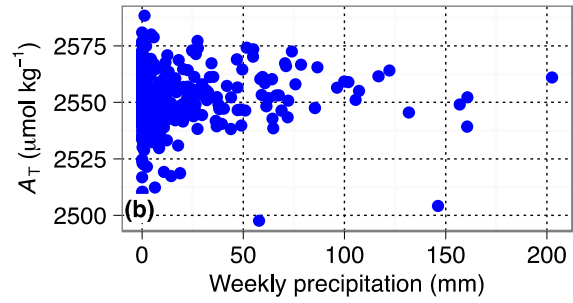
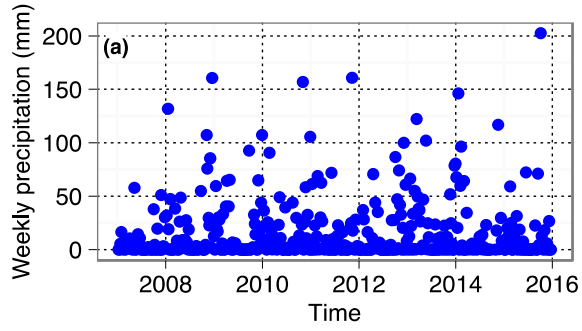
7

8 **Table S2.** Regression analyses on monthly trends of A_T and C_T ($\mu\text{mol kg}^{-1} \text{yr}^{-1}$) for the period
 9 2007-2015, at 1 m.

<i>Parameter</i>	<i>Month</i>	<i>Slope</i> \pm <i>SE</i>	<i>Intercept</i> \pm <i>SE</i>	<i>F</i> _{1,7}	<i>Slope P</i>	<i>R</i> ²
A_T ($\mu\text{mol kg}^{-1}$)	Jan	-1.33 \pm 0.83	5225 \pm 1677	0.2666	0.155	0.267
	Feb	1.09 \pm 0.93	366 \pm 1874	0.1632	0.281	0.163
	Mar	1.48 \pm 0.81	-418 \pm 1628	0.3227	0.111	0.323
	Apr	1.77 \pm 0.84	-1010 \pm 1688	0.3886	0.073	0.389
	May	4.00 \pm 1.58	-5498 \pm 3183	0.4771	0.039	0.477
	Jun	4.53 \pm 0.90	-6566 \pm 1802	0.785	0.001	0.785
	Jul	3.36 \pm 1.03	-4201 \pm 2080	0.6007	0.014	0.601
	Aug	2.01 \pm 1.07	-1490 \pm 2152	0.3355	0.102	0.336
	Sep	1.81 \pm 0.86	-1075 \pm 1723	0.3886	0.073	0.389
	Oct	1.39 \pm 0.94	-225 \pm 1884	0.238	0.183	0.238
	Nov	1.89 \pm 1.23	-1254 \pm 2465	0.2542	0.166	0.254
	Dec	2.00 \pm 1.29	-1470 \pm 2596	0.2556	0.165	0.256
C_T ($\mu\text{mol kg}^{-1}$)	Jan	-0.14 \pm 0.46	2536 \pm 922	0.0135	0.766	0.014
	Feb	2.64 \pm 0.90	-3052 \pm 1806	0.5526	0.022	0.553
	Mar	2.32 \pm 0.77	-2411 \pm 1550	0.5644	0.02	0.564
	Apr	2.93 \pm 0.84	-3637 \pm 1697	0.6324	0.01	0.632
	May	5.06 \pm 1.82	-7936 \pm 3663	0.5244	0.027	0.524
	Jun	5.72 \pm 1.26	-9260 \pm 2540	0.7452	0.003	0.745
	Jul	4.27 \pm 0.91	-6369 \pm 1838	0.7575	0.002	0.758
	Aug	3.37 \pm 1.17	-4541 \pm 2357	0.5407	0.024	0.541
	Sep	1.80 \pm 1.05	-1383 \pm 2117	0.2935	0.132	0.294
	Oct	2.84 \pm 0.65	-3480 \pm 1312	0.73	0.003	0.73
	Nov	2.57 \pm 1.34	-2932 \pm 2693	0.3442	0.097	0.344
	Dec	1.70 \pm 1.25	-1175 \pm 2506	0.2098	0.215	0.21

10

11 **Figure S1.** Precipitation at Nice airport (weekly cumulative precipitation from Tuesday to
12 Monday) during the period 2007-2015 (a) and its relationship to A_T (b) and salinity (c) at Point
13 B, 1 m.



14