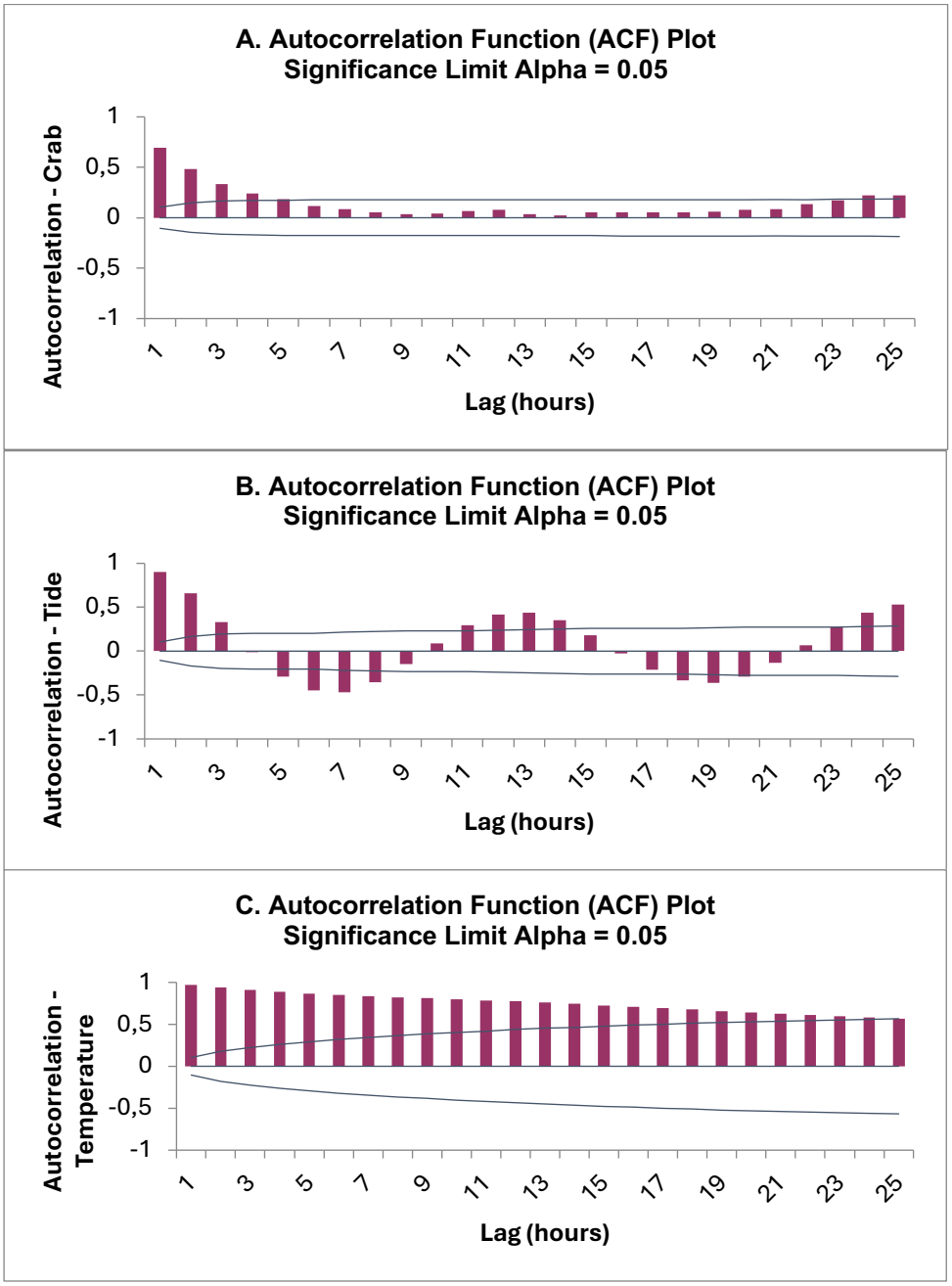
Fig S1. Autocorrelation analysis on the time series patterns of A. Crab density, B. Tide levels, C. Water temperature, D. pH and E. Light intensity in the vent region. The horizontal lines indicate levels of significance at alpha = 0.05. The lags (hours) that exceed the significance limit lines are statistically significant at alpha = 0.05.



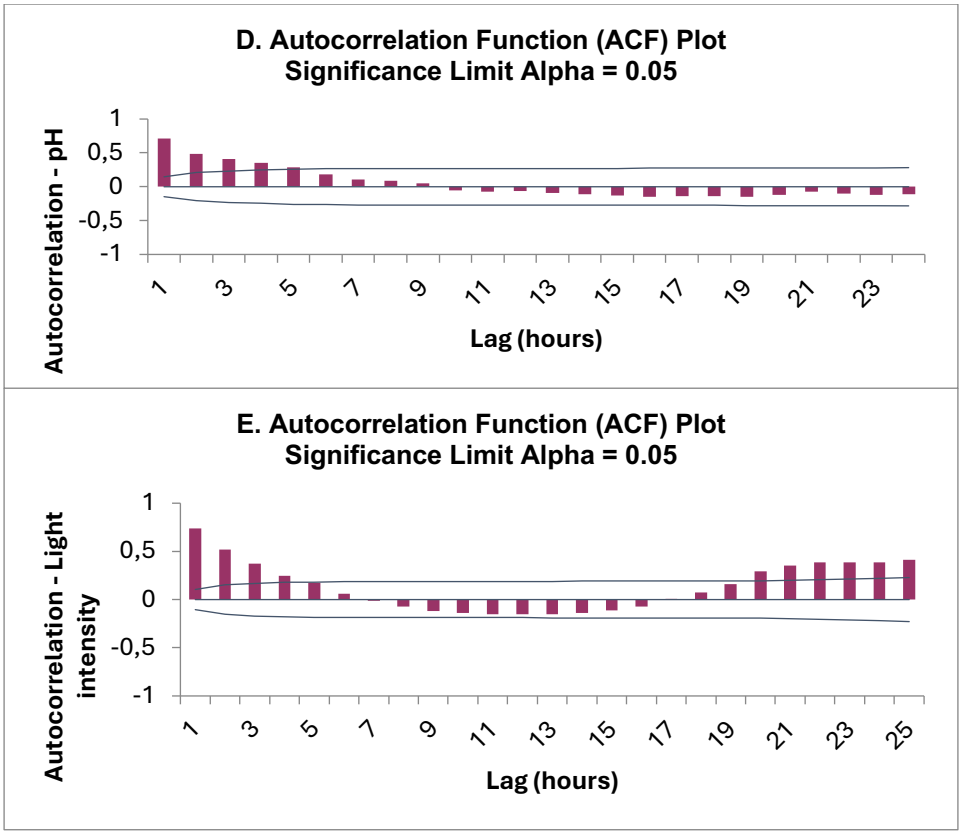


Fig. S2. Spectral density plot of tide levels showed a significant peak at 13 hours.

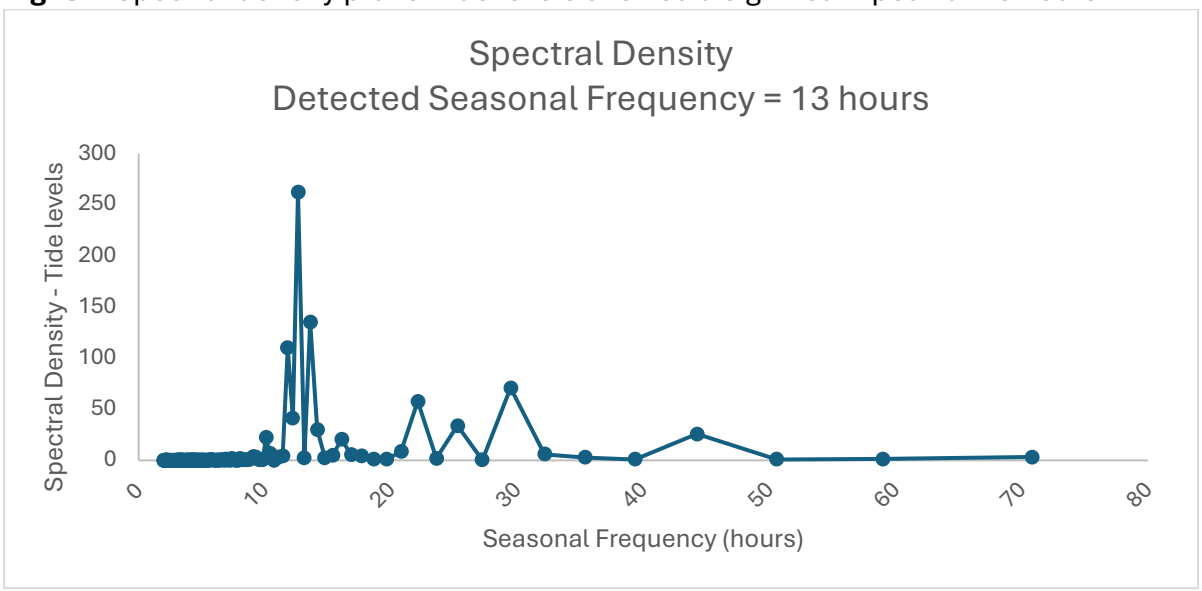
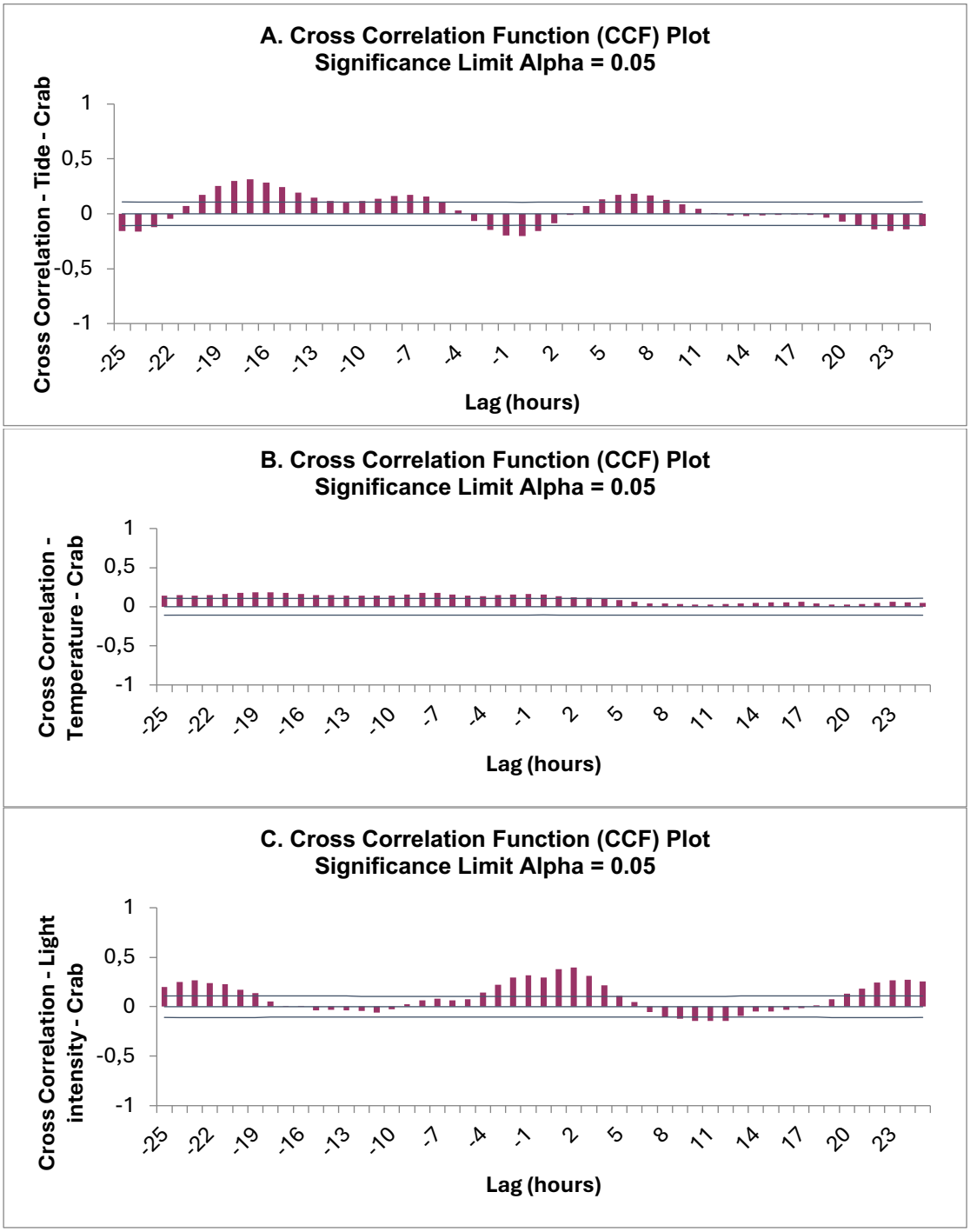


Fig S3. Cross correlation analysis of the time series pattern of Crab density vs A. Tide levels, B. Water temperature, C. Light intensity, D. pH, and E. Water temperature vs Tide levels at the vent region. The horizontal lines indicate levels of significance at alpha = 0.05. The lags (hours) that exceed the significance limit lines are statistically significant at alpha = 0.05. Y -axis indicates coherence values (0 to +1 or to -1). Greater coherence values indicate a greater correlation between the variables. Positive values indicate a positive relationship, negative values indicate a negative relationship.



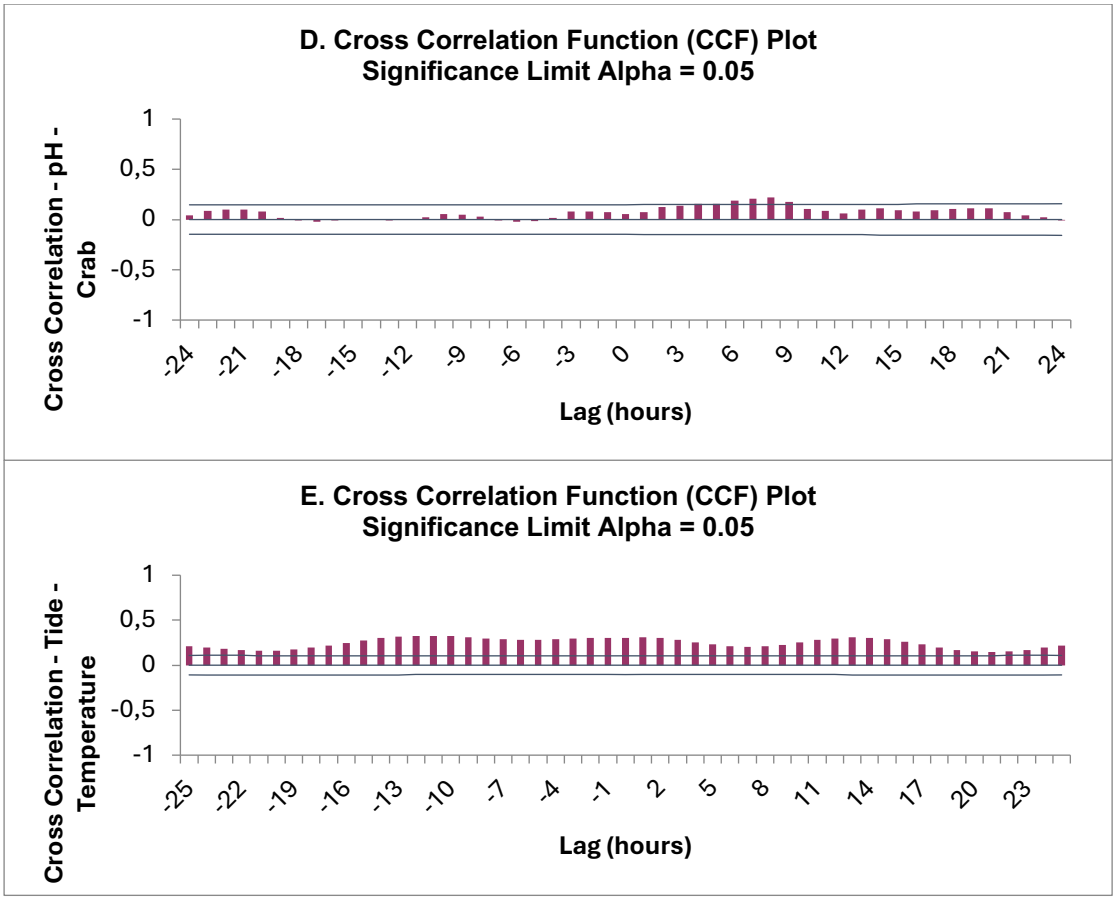
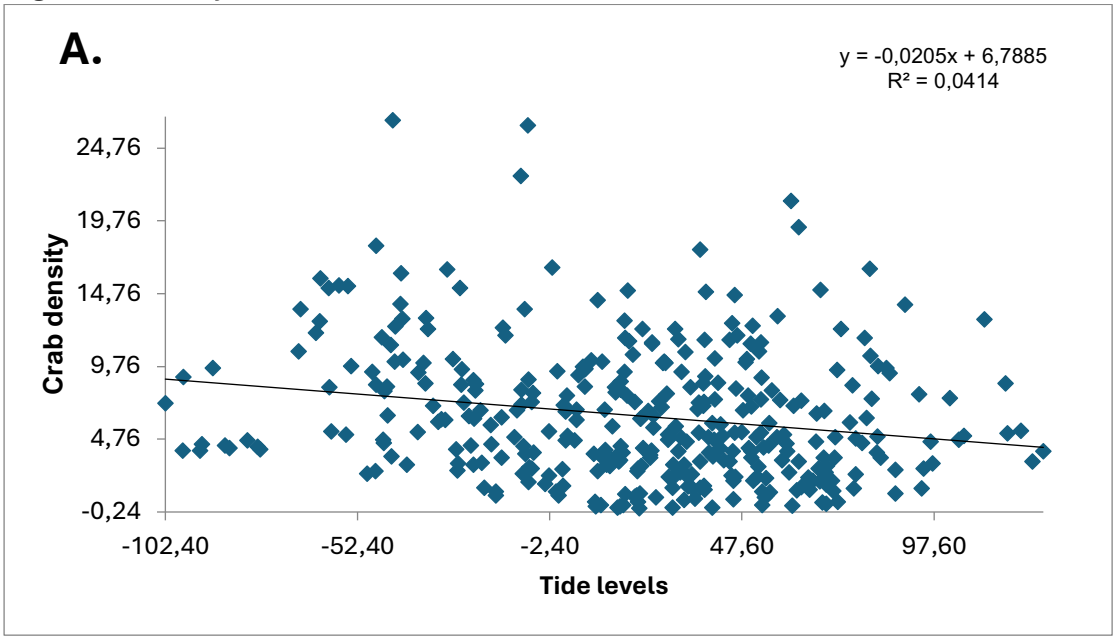
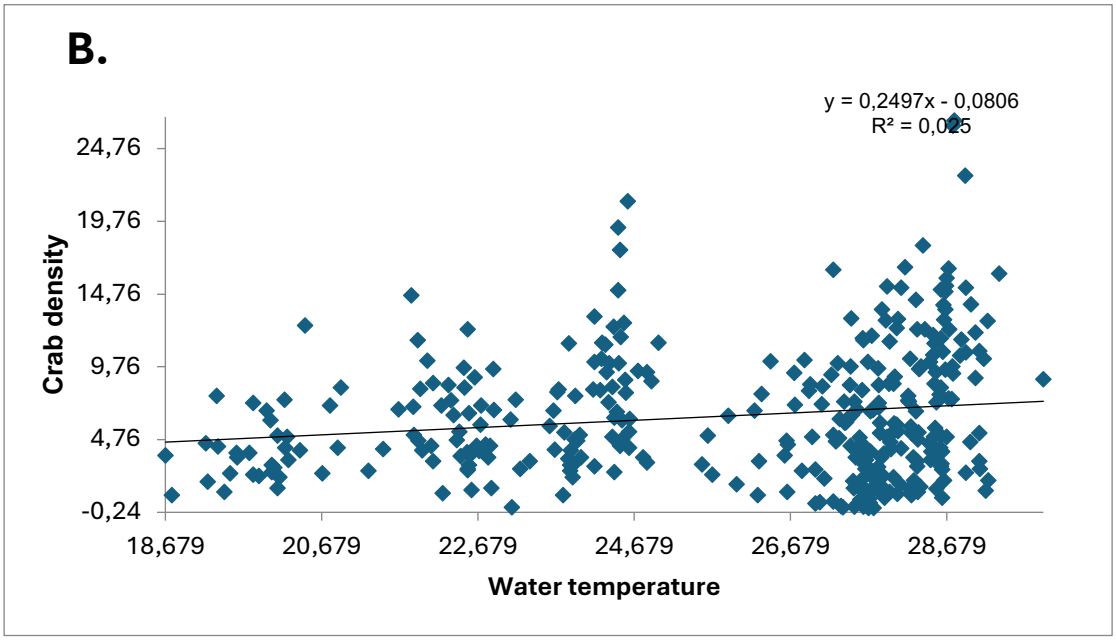
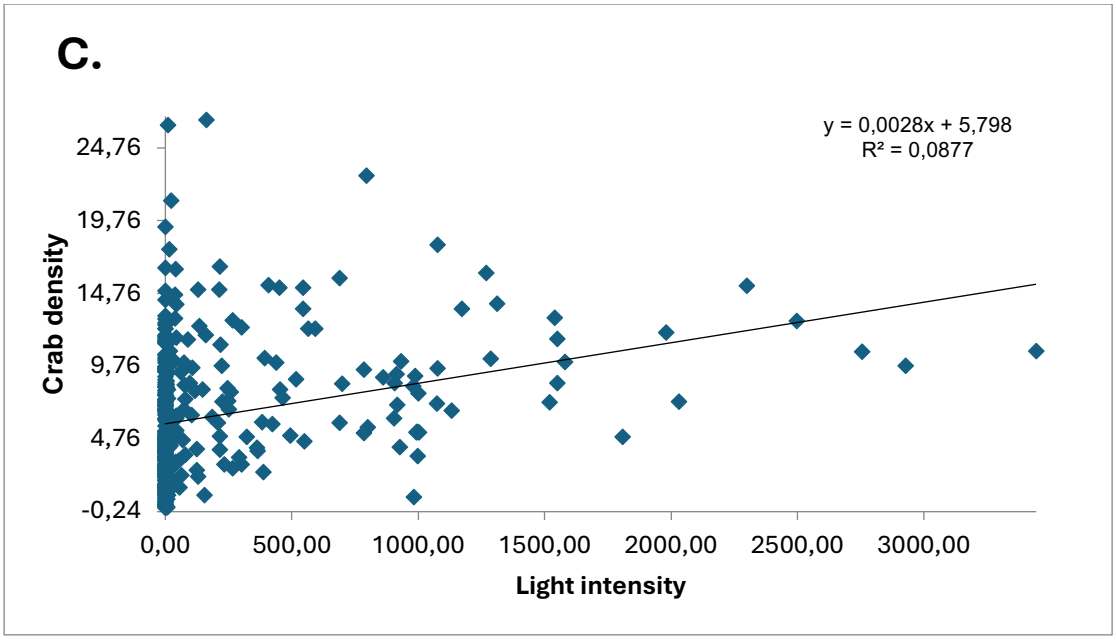

D. Cross Correlation Function (CCF) Plot
Significance Limit Alpha = 0.05
Cross Correlation - pH - Crab
1
0,5
0
-0,5
-1
-24 -21 -18 -15 -12 -9 -6 -3 0 3 6 9 12 15 18 21 24
Lag (hours)
E. Cross Correlation Function (CCF) Plot
Significance Limit Alpha = 0.05
Cross Correlation - Tide - Temperature
1
0,5
0
-0,5
-1
-25 -22 -19 -16 -13 -10 -7 -4 -1 2 5 8 11 14 17 20 23
Lag (hours)

Fig S4. Scatter plots of Crab density vs A. Tide levels, B. Water temperature, C. Light intensity and D. pH in the vent region. Equations shown are derived from linear regression analysis.






C.
y = 0,0028x + 5,798
R² = 0,0877
24,76
19,76
14,76
9,76
4,76
-0,24
Crab density
0,00
500,00
1000,00
1500,00
2000,00
2500,00
3000,00
Light intensity

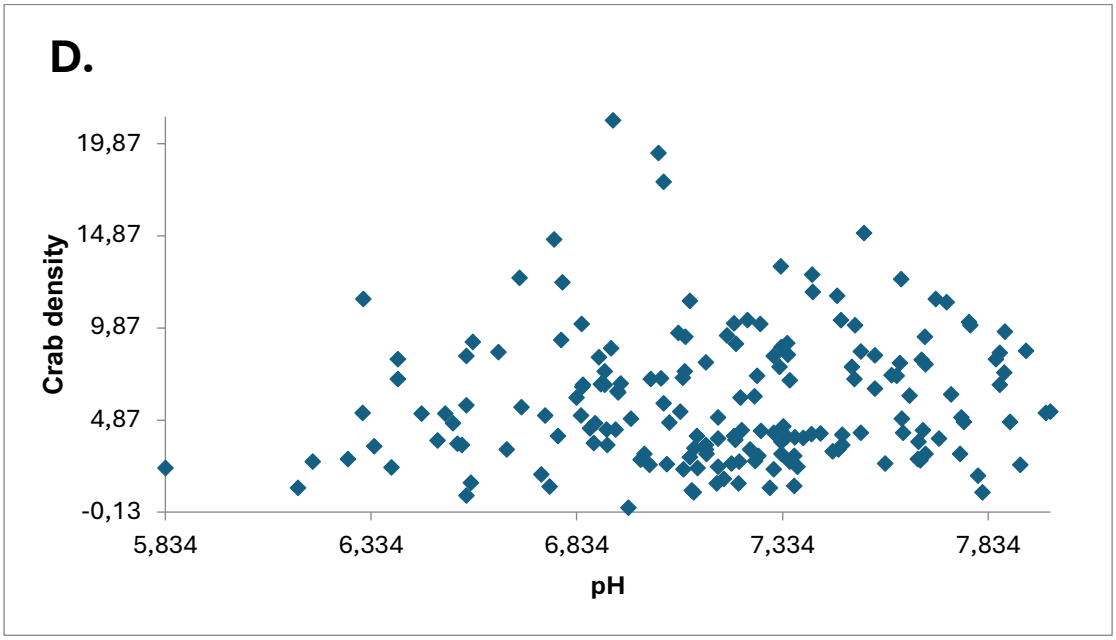
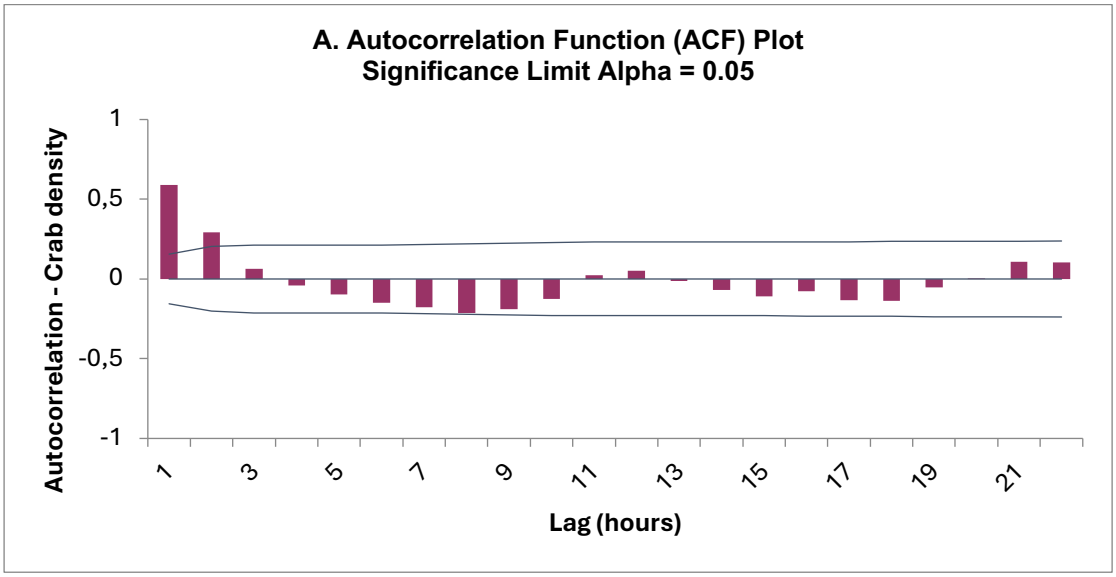
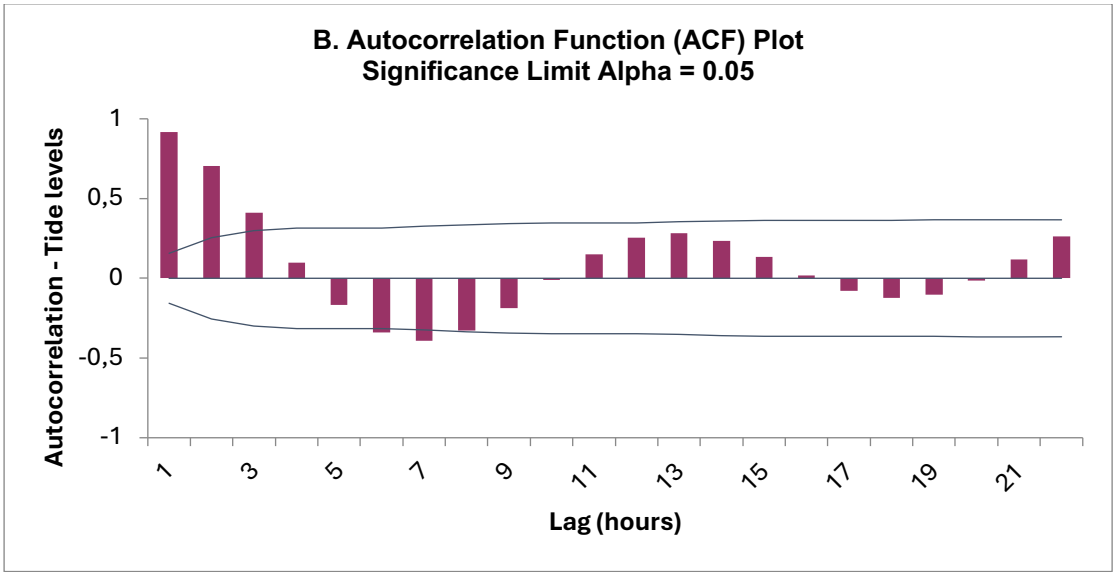
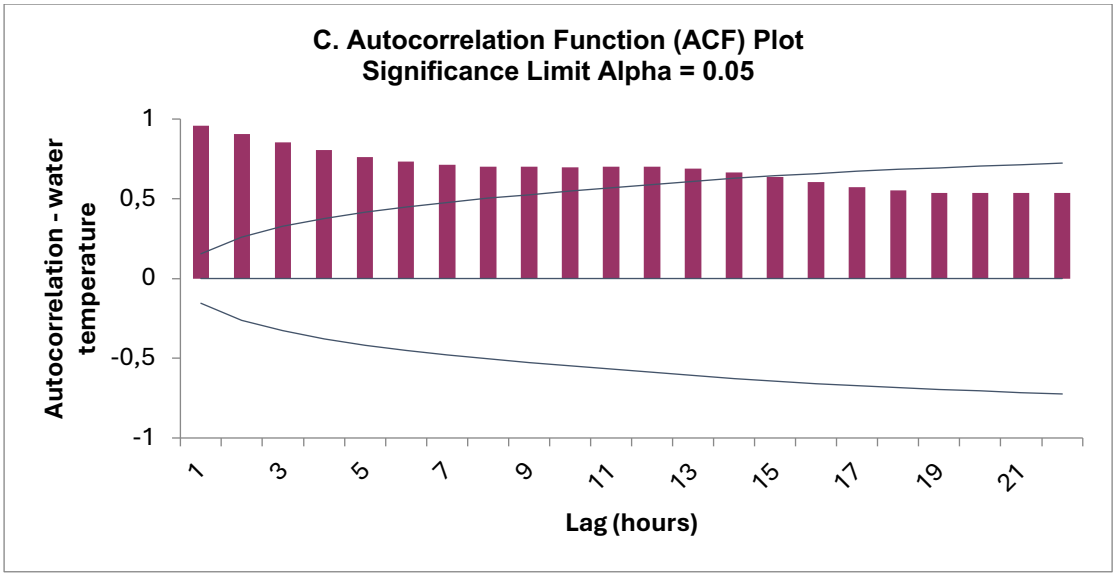
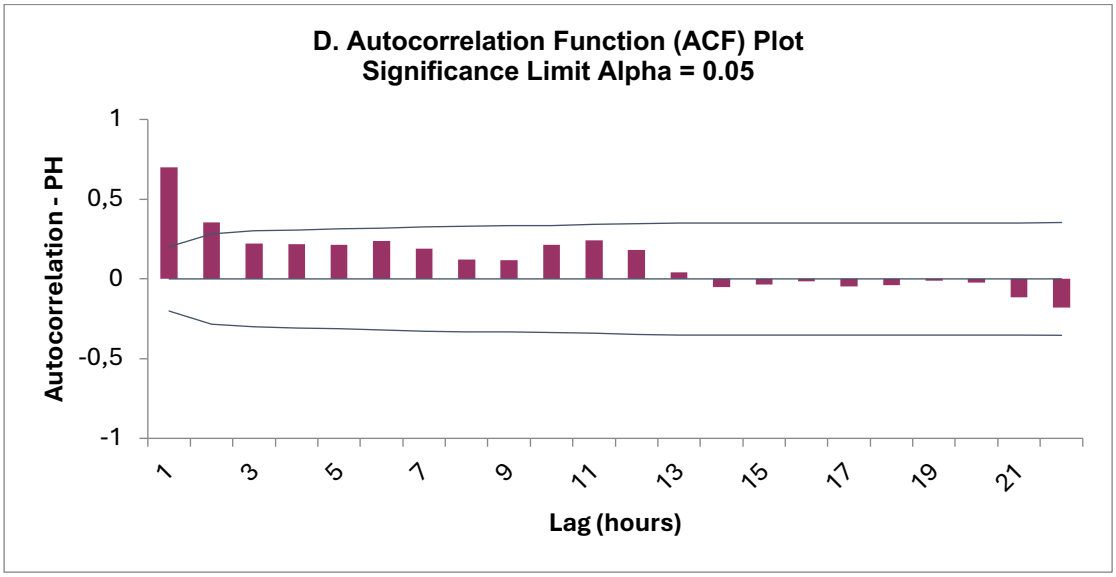

D.
19,87
14,87
9,87
4,87
-0,13
Crab density
5,834
6,334
6,834
7,334
7,834
pH

Fig. S5. Autocorrelation analysis on the time series patterns of A. Crab density, B. Tide levels, C. Water temperature, D. pH and E. Light intensity in the peripheral region. The horizontal lines indicate levels of significance at alpha = 0.05. The lags (hours) that exceed the significance limit lines are statistically significant at alpha = 0.05.






C. Autocorrelation Function (ACF) Plot
Significance Limit Alpha = 0.05
Autocorrelation - water temperature
1
0,5
0
-0,5
-1
1
3
5
7
9
11
13
15
17
19
21
Lag (hours)


D. Autocorrelation Function (ACF) Plot
Significance Limit Alpha = 0.05
Autocorrelation - PH
1
0,5
0
-0,5
-1
1
3
5
7
9
11
13
15
17
19
21
Lag (hours)

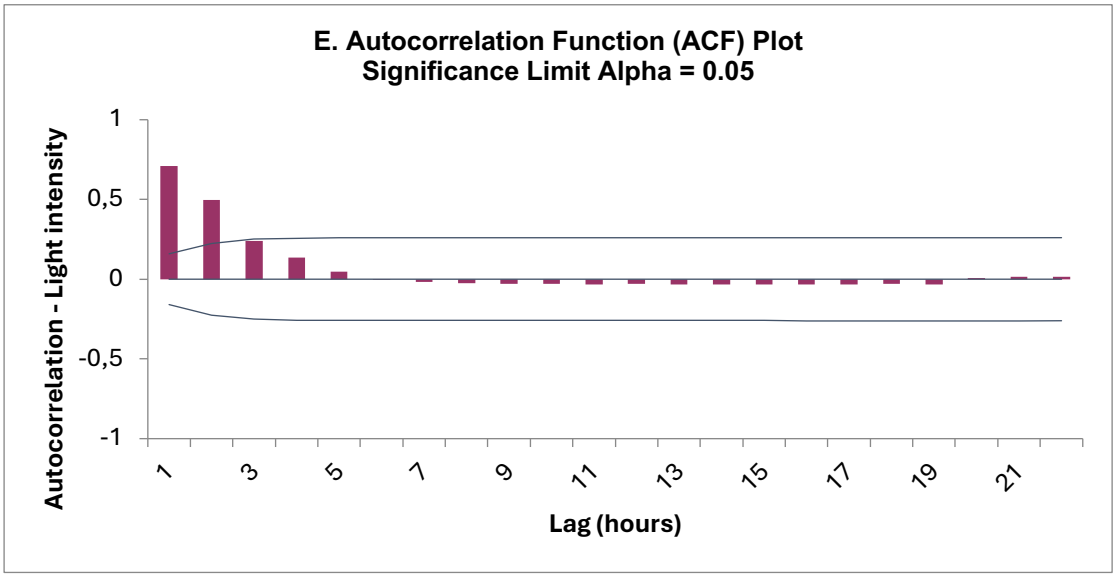

E. Autocorrelation Function (ACF) Plot
Significance Limit Alpha = 0.05
Autocorrelation - Light intensity
1
0,5
0
-0,5
-1
1
3
5
7
9
11
13
15
17
19
21
Lag (hours)

Fig. S6. Spectral density plot of tide levels showed a significant peak at 13 hours.

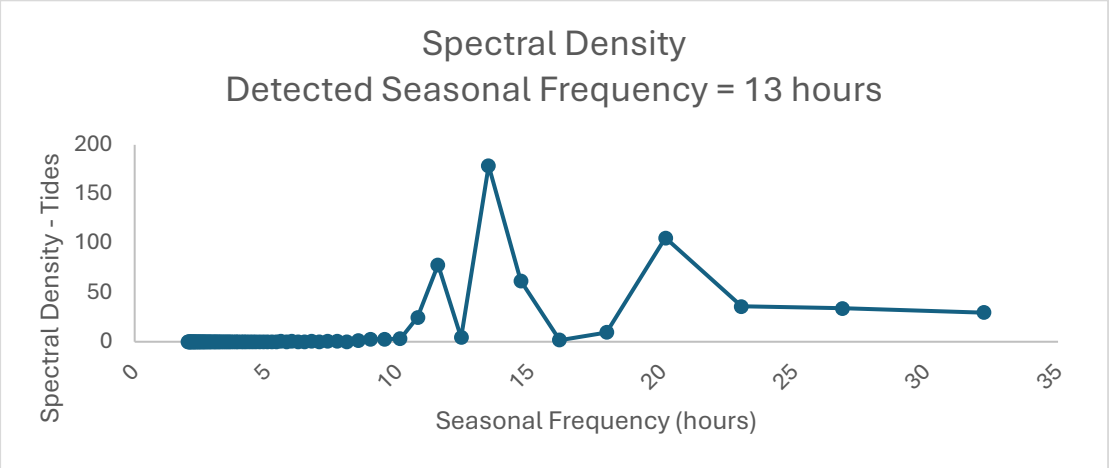
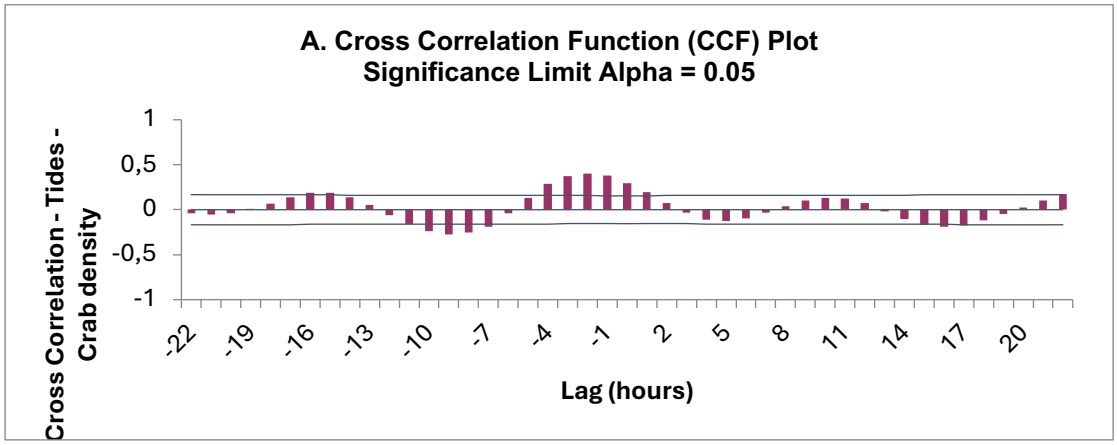
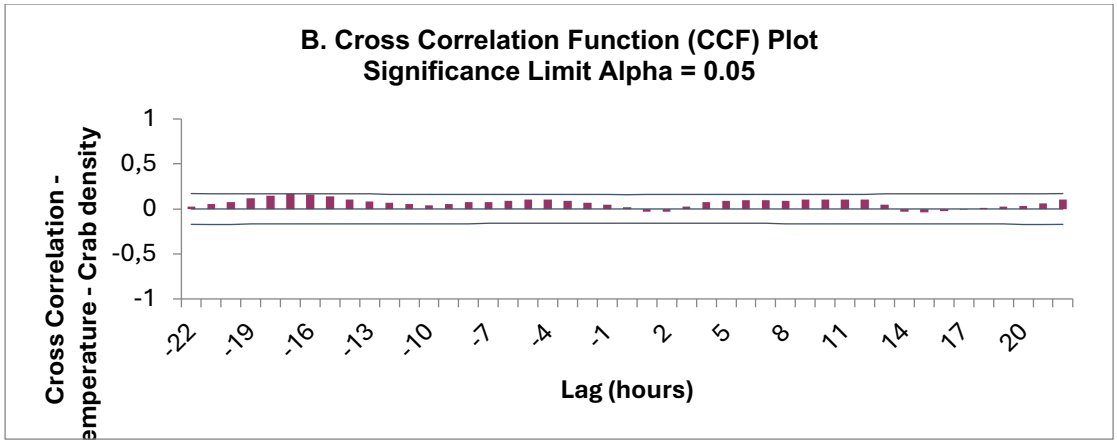
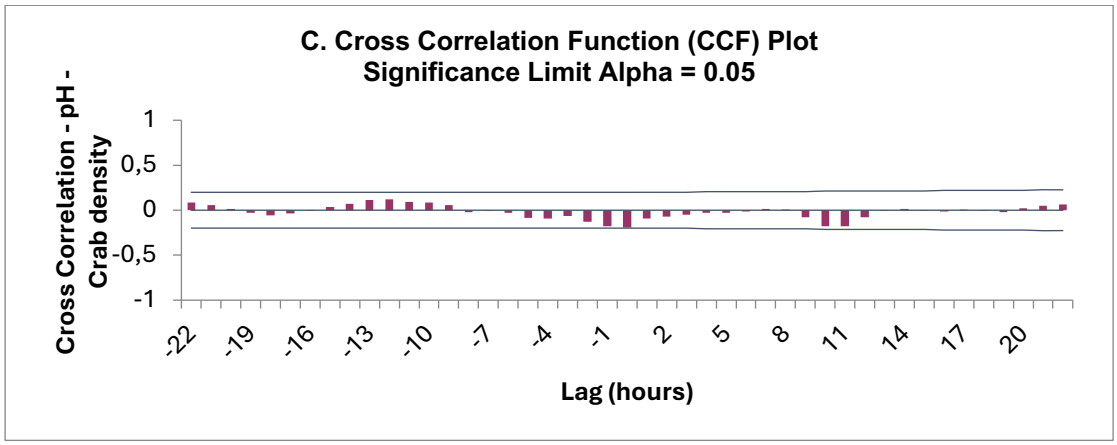
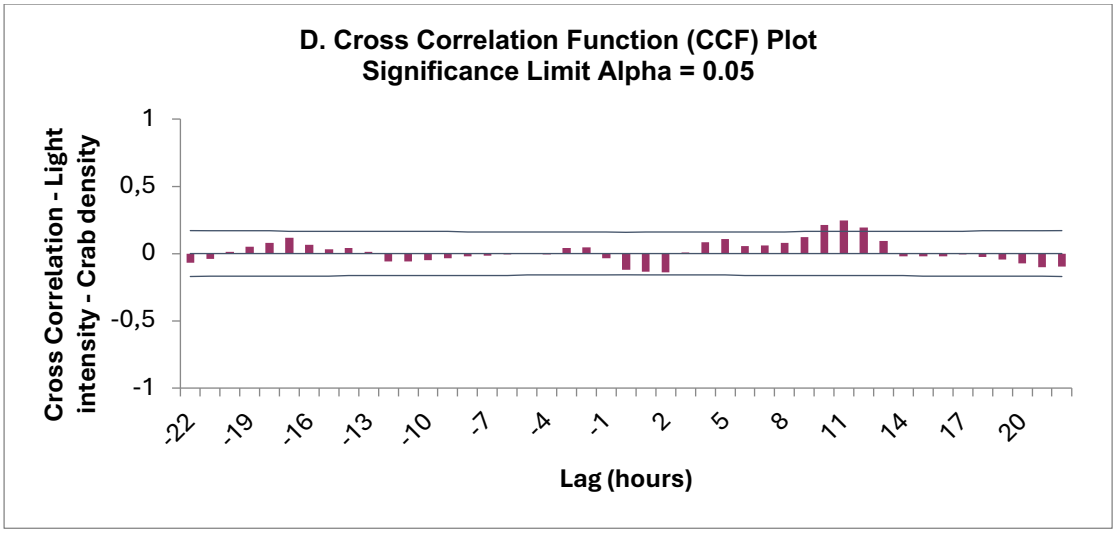


Fig. S7. Cross correlation analysis of the time series pattern of Crab density vs A) Tide levels, B) Water temperature, C) Light intensity, D) pH and E.) Water temperature vs Tide levels at the peripheral region. The horizontal lines indicate levels of significance at alpha = 0.05. The lags (hours) that exceed the significance limit lines are statistically significant at alpha = 0.05. Y -axis indicate coherence values (0 to +1 or to -1). Greater coherence values indicate greater correlation between the variables. Positive values indicate positive relationship, negative values indicate negative relationship.








D. Cross Correlation Function (CCF) Plot
Significance Limit Alpha = 0.05
Cross Correlation - Light intensity - Crab density
1
0,5
0
-0,5
-1
-22
-19
-16
-13
-10
-7
-4
-1
2
5
8
11
14
17
20
Lag (hours)

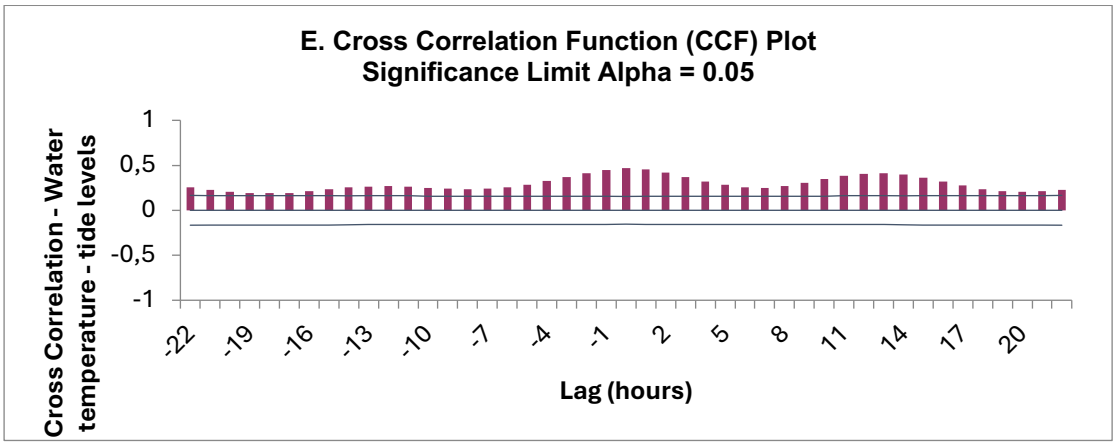

E. Cross Correlation Function (CCF) Plot
Significance Limit Alpha = 0.05
Cross Correlation - Water temperature - tide levels
1
0,5
0
-0,5
-1
-22
-19
-16
-13
-10
-7
-4
-1
2
5
8
11
14
17
20
Lag (hours)

Fig. S8. Scatter plots of A. Crab density vs pH and B. Water temperature vs Tide levels in the peripheral region. Equations shown are derived from linear regression analysis.