Results Summary

|  |  |  |
| --- | --- | --- |
| # of Sims | Intercept\* | Slope\* |
| 10 1st | 410000 | -46000 |
| 10 2nd | 420000 | -47000 |
| 50 | 410000 | -46000 |
| 100 | 420000 | -47000 |

Nauplii stage

\* Intercepts and slopes are calculated for all Floquet exponents over pho values.

coef.adult <- coef(lm(Floquet ~ as.numeric(Pho\_value), data=adult.floquet))

Copepodid stage

|  |  |  |
| --- | --- | --- |
| # of Sims | Intercept\* | Slope\* |
| 10 1st | 6200 | -690 |
| 10 2nd | 6300 | -700 |
| 50 | 6200 | -700 |
| 100 | 6300 | -700 |

Chalimi stage

|  |  |  |
| --- | --- | --- |
| # of Sims | Intercept\* | Slope\* |
| 10 1st | 10000 | -1100 |
| 10 2nd | 10000 | -1200 |
| 50 | 10000 | -1200 |
| 100 | 10000 | -1200 |

Adult stage

|  |  |  |
| --- | --- | --- |
| # of Sims | Intercept\* | Slope\* |
| 10 1st | 430000 | -48000 |
| 10 2nd | 440000 | -49000 |
| 50 | 430000 | -49000 |
| 100 | 430000 | -49000 |

Plots of the Floquet exponent for each life stage (100 simulations per pho value)



Figure 1: Boxplot plotting Floquet exponents (black dots) at each pho value/salinity variation (Pho=1.913 – 0). Red line indicates the slope for all Floquet exponents are pho value decreases.



Figure 2: Boxplot plotting Floquet exponents (black dots) at each pho value/salinity variation (Pho=1.913 – 0). Red line indicates the slope for all Floquet exponents are pho value decreases.



Figure 3: Boxplot plotting Floquet exponents (black dots) at each pho value/salinity variation (Pho=1.913 – 0). Red line indicates the slope for all Floquet exponents are pho value decreases.



Figure 4: Boxplot plotting Floquet exponents (black dots) at each pho value/salinity variation (Pho=1.913 – 0). Red line indicates the slope for all Floquet exponents are pho value decreases.

ANOVA Output for N=100 data frames

* From the ANOVA output there is a significant difference between the Floquet exponets are the pho values changes. For all life-stages p value was lower than 2e-16.

A screenshot of a cell phone

Description automatically generated

Can the pho value then describe salinity and abundance?

Salinity

A close up of a screen

Description automatically generated

Abundance

A screenshot of a cell phone

Description automatically generated

It can then be conclude that both the abundance of each life stage and the salinity values differ significantly as the pho values change.