



“Copepods as indicators of oxygen changes”

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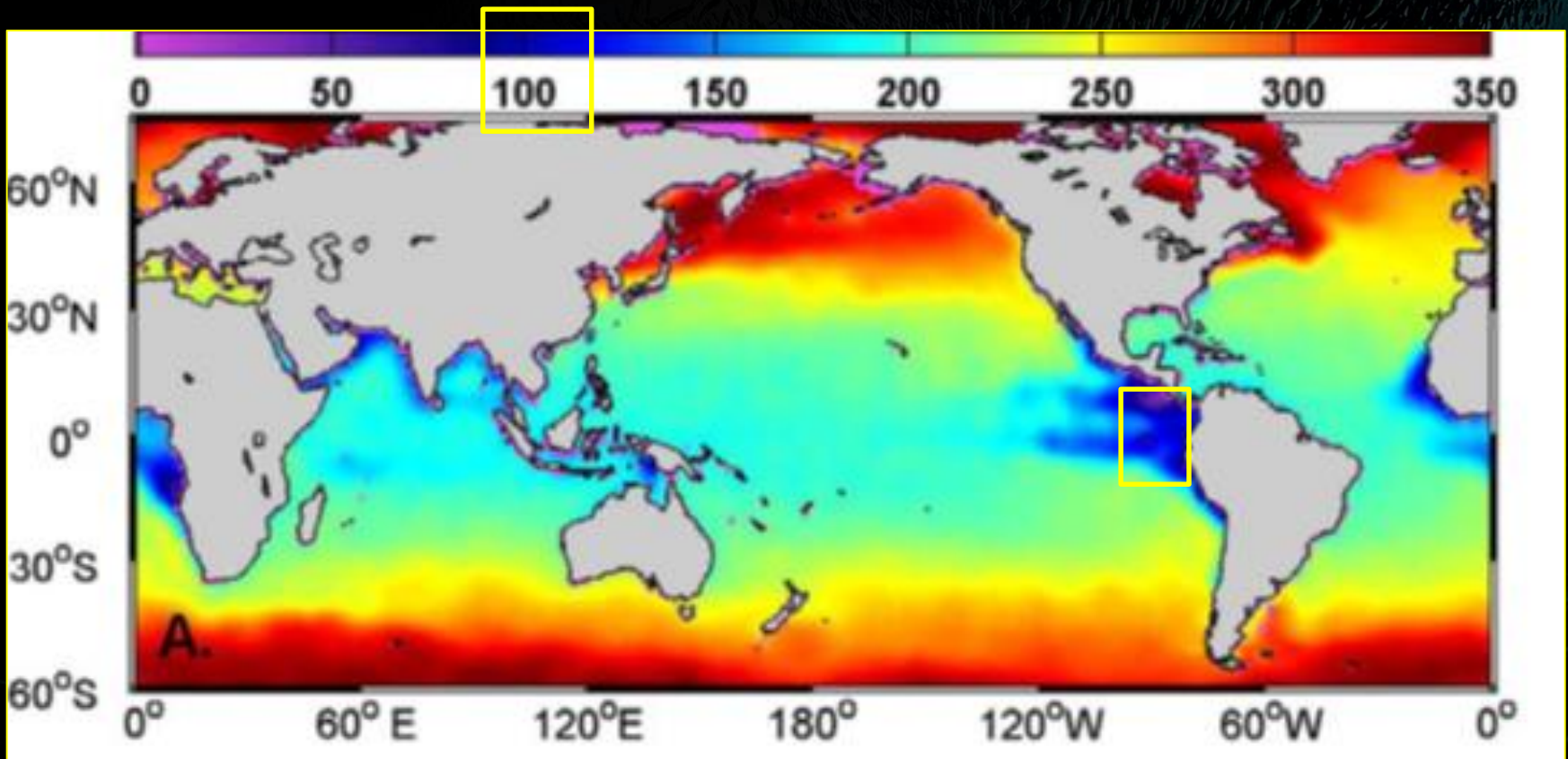
ICES/PICES 6th Zooplankton production symposium : “ New Challenges in a Changing Ocean” 9-13 May Bergen, Norway

Outlines

- Introduction
- Objectives
- Metodology
- Results
- Summary
- Conclusions
- Next steps

Global distribution of 50 meters oxygen

($\mu\text{mol/kg}$)



Source: Conkright et al (2002)

Copepods are the biggest group in zooplankton

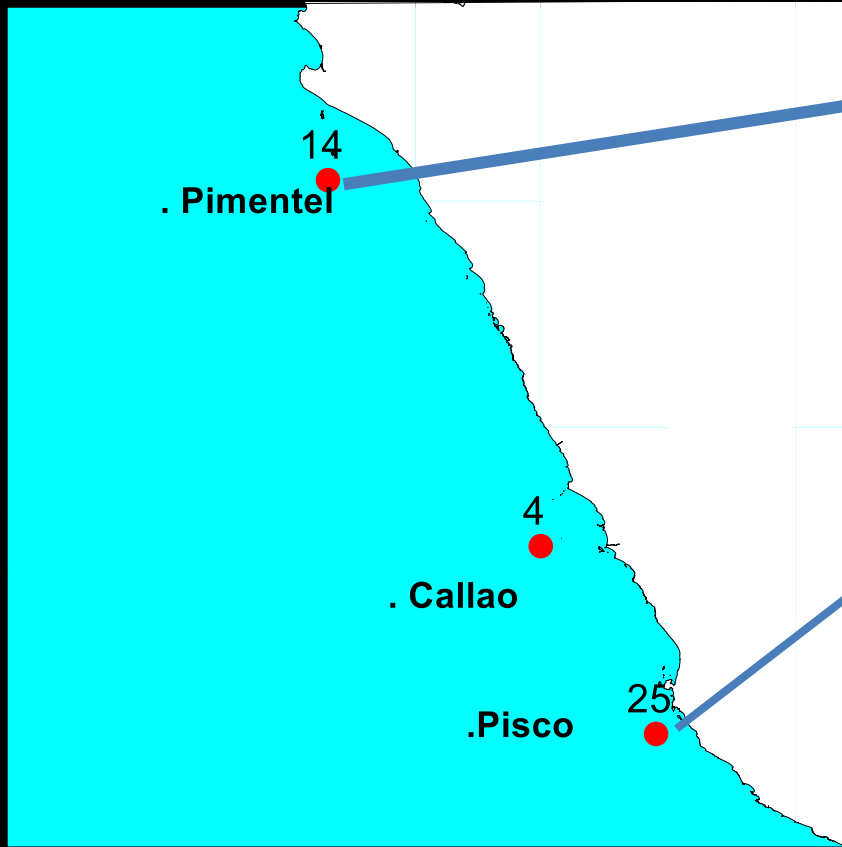


Di Capua SZN

Objectives

- To determine *Acartia tonsa* and *Calanus chilensis* consumption rates. Northern Humboldt Current System Upwelling principal species.
- To determine oxygen consumption (above and below oxycline changes associated with oxygen concentration) .

Study Area



Target species

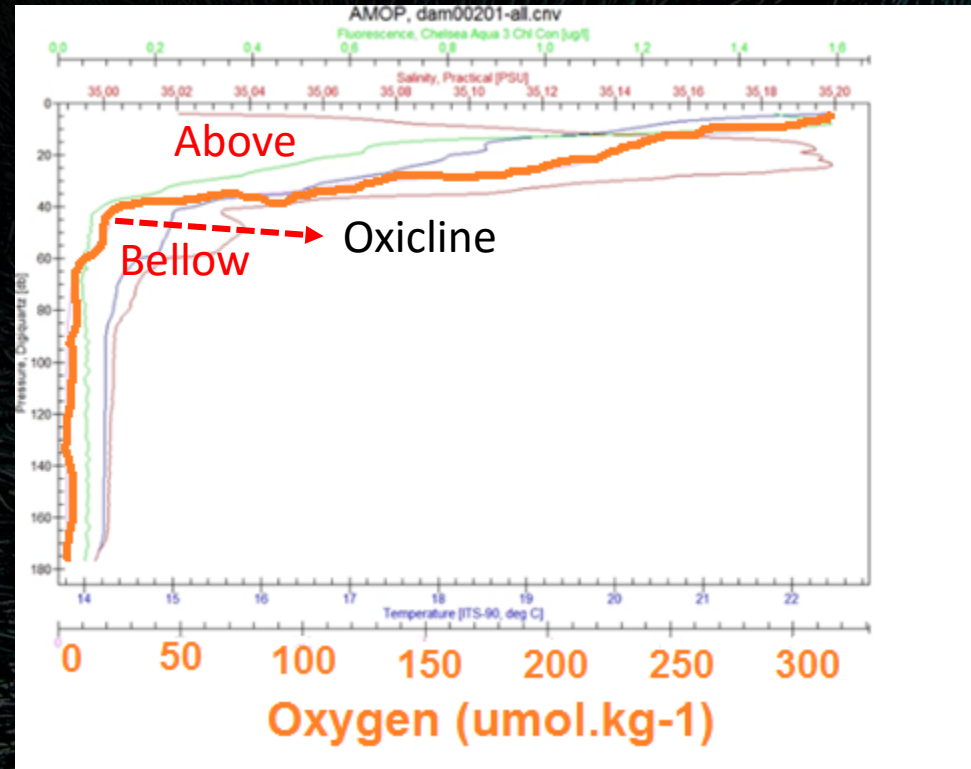
Sampling design



Acartia tonsa



Calanus chilensis



Zooplankton sampling



Sorting specimens



Seawater sampling



Incubation



Micro Winkler Method

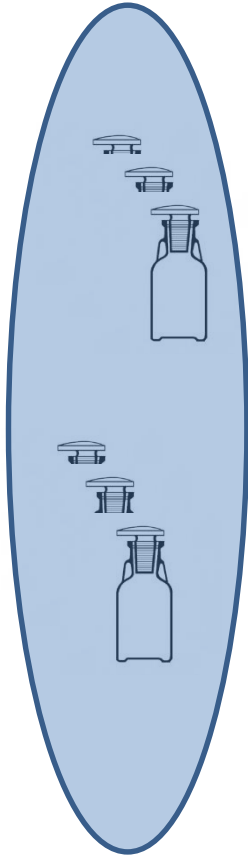
Sorted: 3 replicates per species per bottles

Incubation time (3h, 6h and 12h)

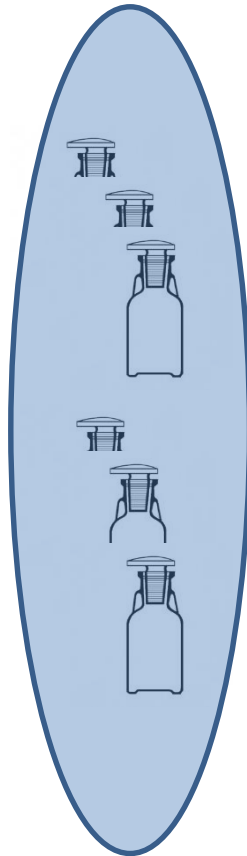
T0



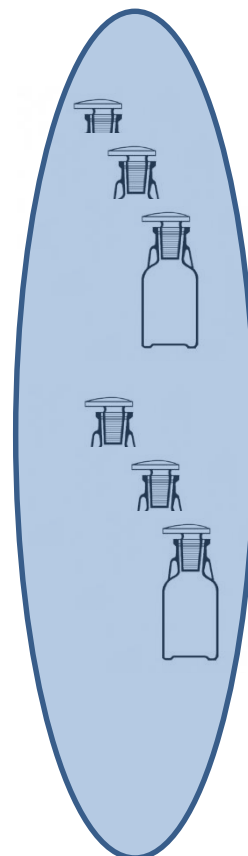
T1 (3h)



T2(6h)



T3(12h)

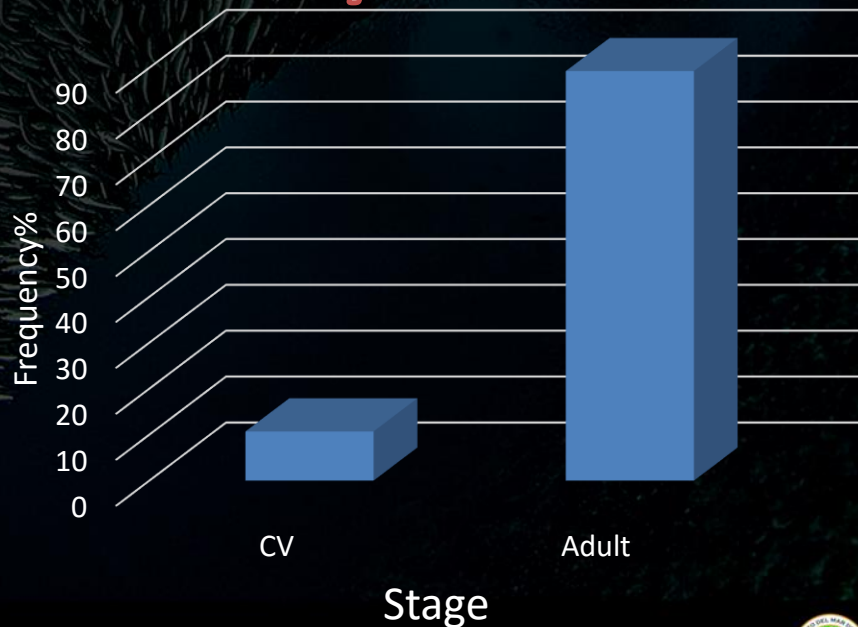
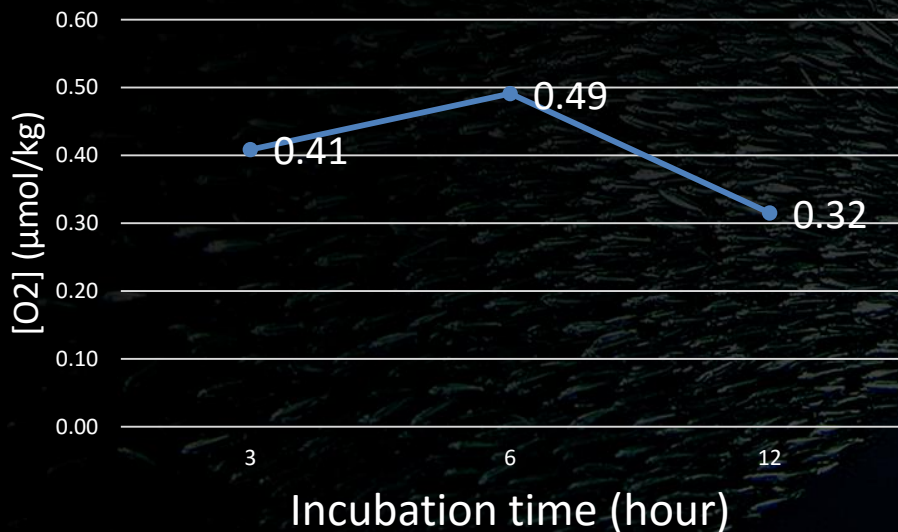
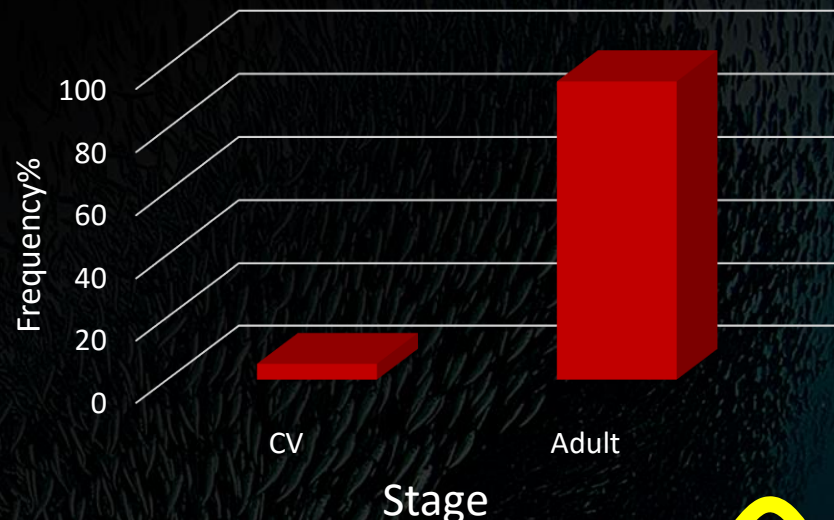
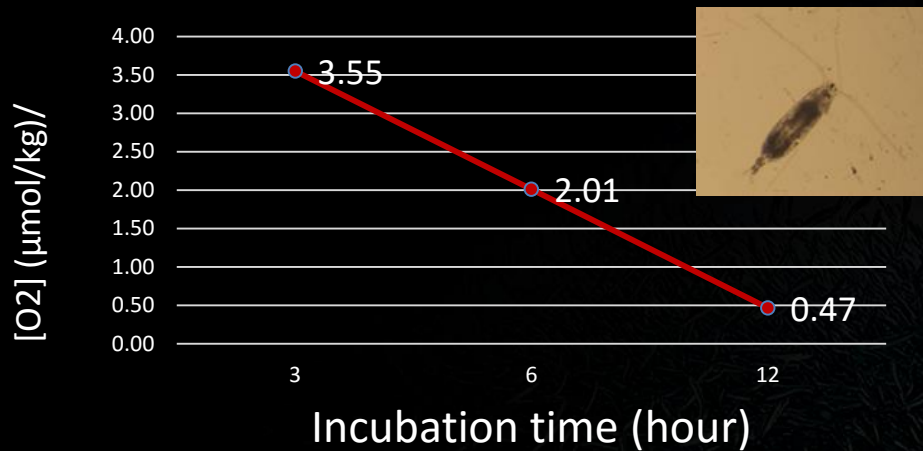


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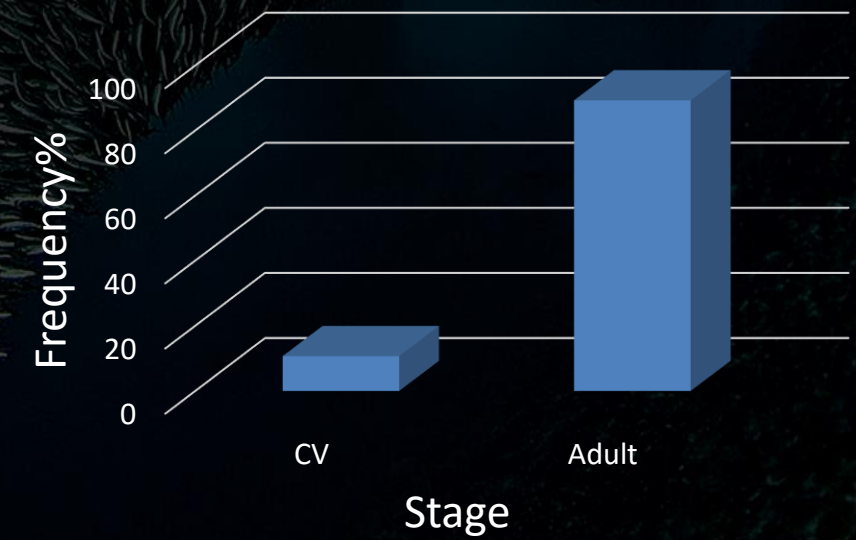
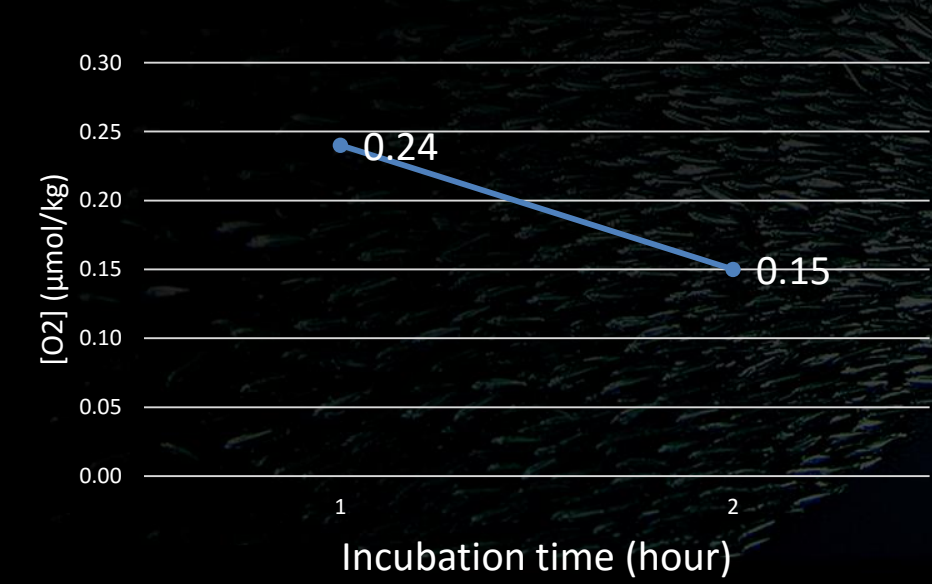
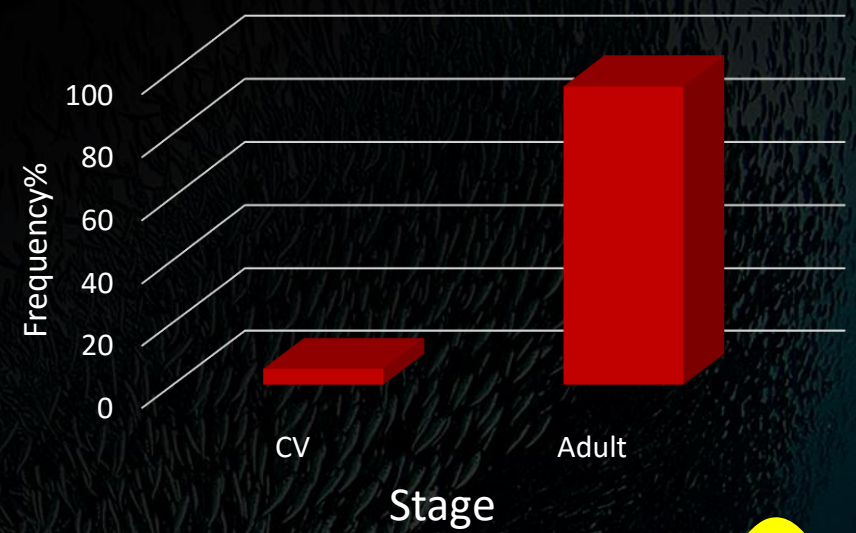
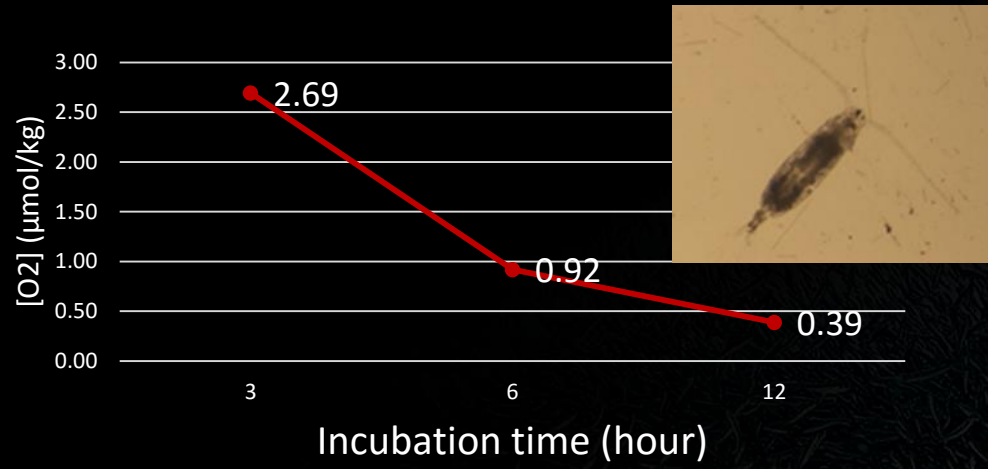
Calanus/ *Acartia tonsa*

Results

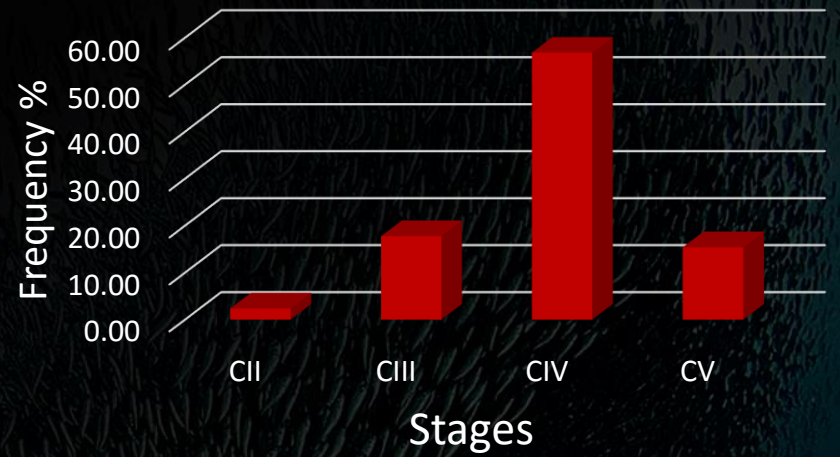
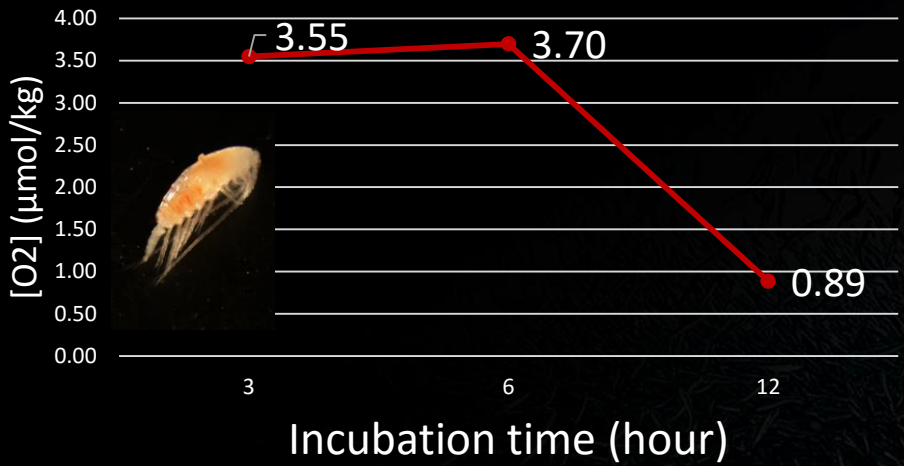
Acartia tonsa respiration rate Station 4



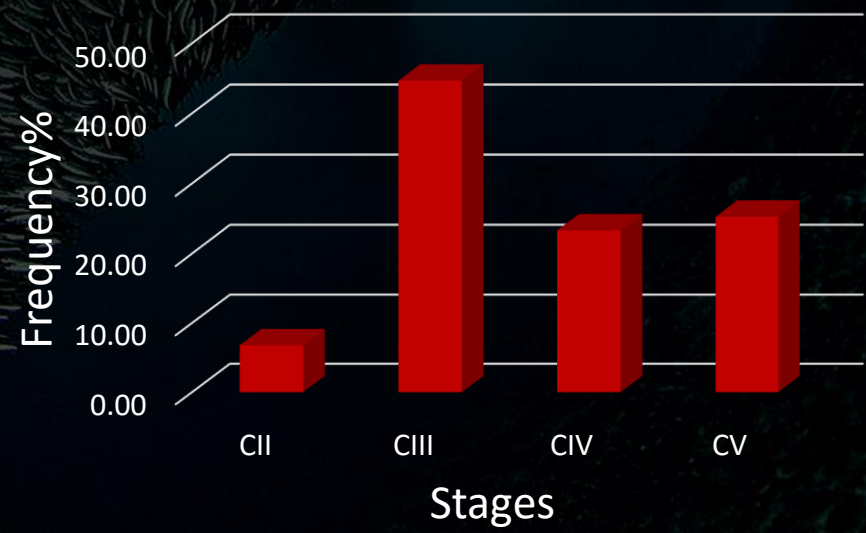
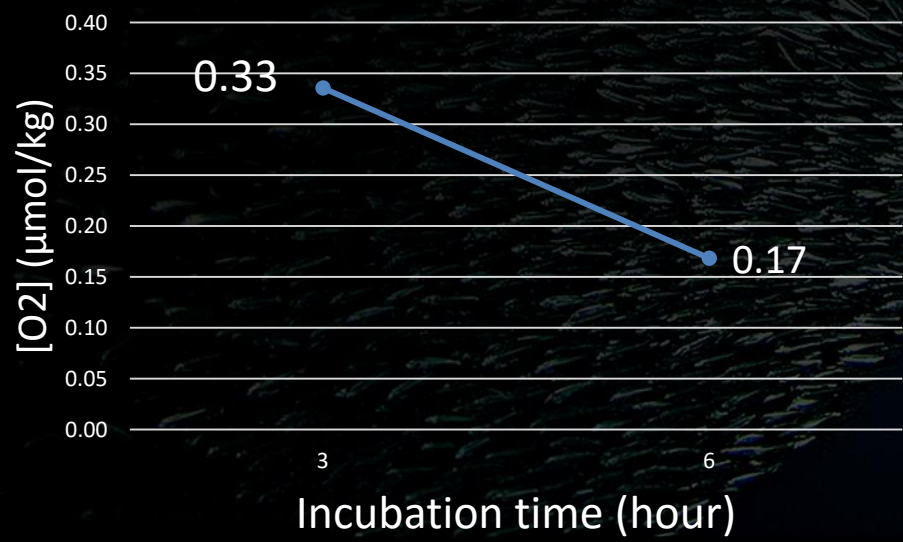
Acartia tonsa respiration rate Station 25



Calanus chilensis repiration rate Station 14



Oxycline

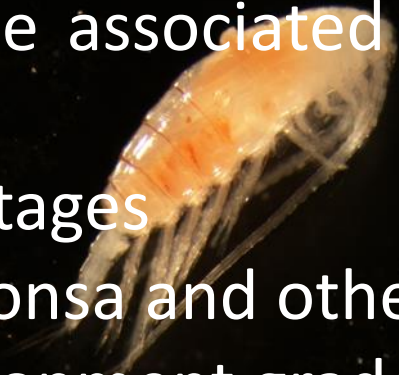


Conclusions

- Both species oxygen consume was lower bellow the oxycline.
- *Calanus australis* oxygen consume is higher almost duplicate *Acartia tonsa* oxygen consume.
- Both species can go into the OZM . To avoid predators and probably its lower its metabolism

Next steps

- To determine oxygen consume in different early stages.
- To determine oxygen consume associated with temperature.
- To determine in reproductive stages of *Calanus chilensis* , *Acartia tonsa* and others
- To find out body size and development grade influence on oxygen consumes.





Acknowledgement:

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L'Atalante crew



Gracias !



IRD-LEGOS

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