

## **ABSTRACT**

### *Active food selection in appendicularians and the fate of their discarded houses.*

Appendicularians are planktonic tunicates which use an external filtering device named « the house » in order to collect food particles from sea water. Those houses are continuously produced and discarded, thus participating to the carbon export to deeper oceanic layers. Those organisms are then traditionally considered as non-selective filter feeders. On the contrary, by using video microscopic observations we showed that appendicularians are able to actively selecting the particles that they ingest. Particles that are too large, toxic particles or nutrient limited algae are then selectively rejected. Those observations also have allowed describing the integrality of the particles size spectra that potentially may be ingested by appendicularians. In a second study, we observed the effect of the age of discarded appendicularian houses on their sinking properties. An intense deflation process was observed and house quickly decrease in size while increasing their density and sinking velocity. This strong deflation process also induce a backflush of the particles contained in the food concentrating filter which lead to a strong loss of weight of the house in the first hour. This loss of particles, coupled with increase of sinking speed has large consequences on carbon flux in the water column.

16.april - Sars Guest Speaker  
Fabien Lombard, Postdoctoral Researcher  
National Institute for Aquatic Resources  
Oceanography Section  
Technical University of Denmark