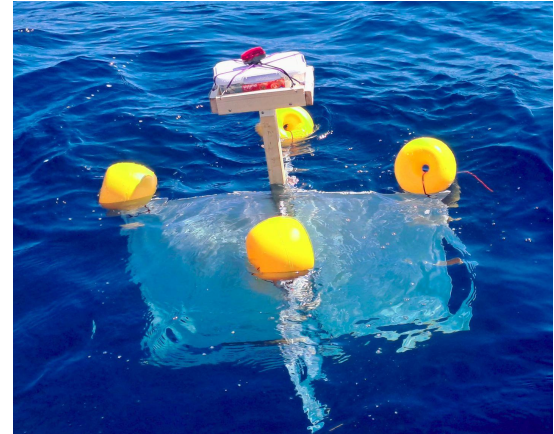


# Drifters Do it Yourself (D2iY), an integrated project to learn oceanography by building and deploying surface drifters.

Aida Alvera-Azcárate, Alexander Barth, Abel Dechenne, Cédric Delforge,  
Sylvie Gobert, Loïc Laur, and Cécile Pujol



# Master in Oceanography at the University of Liège

1st year: interdisciplinary frame to cover a large array of basic oceanography topics

Physical, chemical, biological, geological oceanography, law of the sea, marine resources...

A 2-week research stay at STARESO (Corsica)

Hands-on experiences, fieldwork

Practical application of theoretical concepts



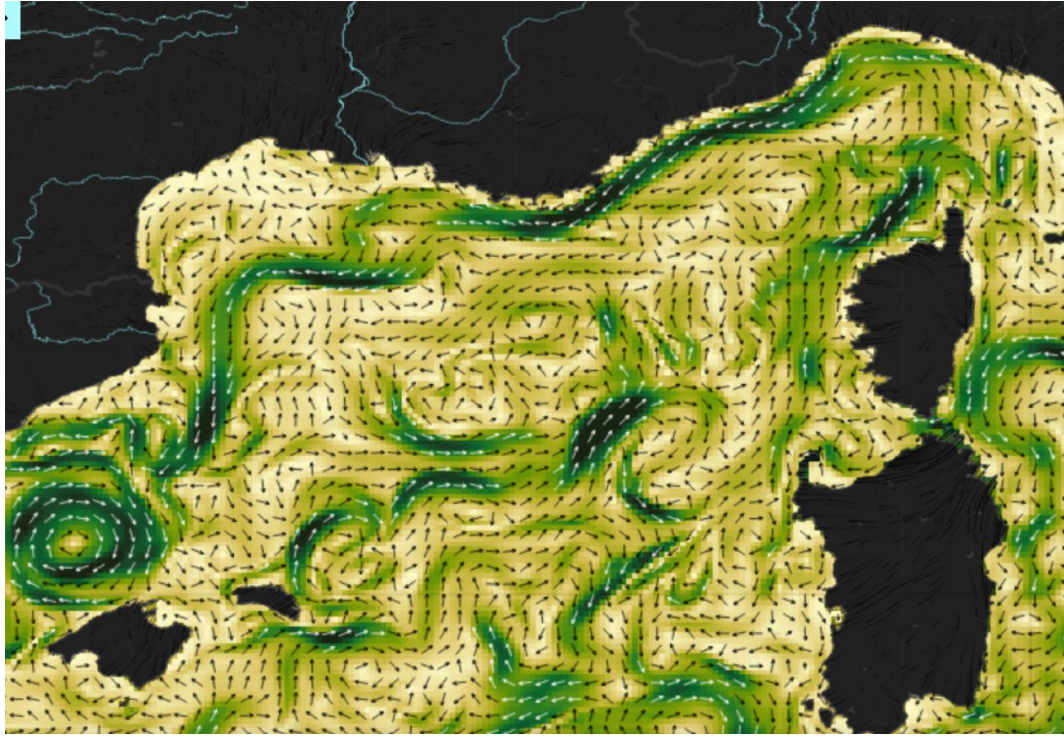
Students' background: biology, geology, environmental sciences, but also career changes ("love for the ocean")

# Drifters Do it Yourself (D2iY)

Main objectives:

- Ultimate objective: measure ocean currents in the Bay of Calvi with self-made drifting buoys
- Integrate oceanographic knowledge acquired during the year
- Develop a project from A to Z so students can feel the project as their own
- Promote group work

# Why ocean currents?



Ocean has the largest heat capacity in the climate system

Control the rate of climate change

Ocean currents transport:

- heat
- nutrients
- oxygen
- pollutants...

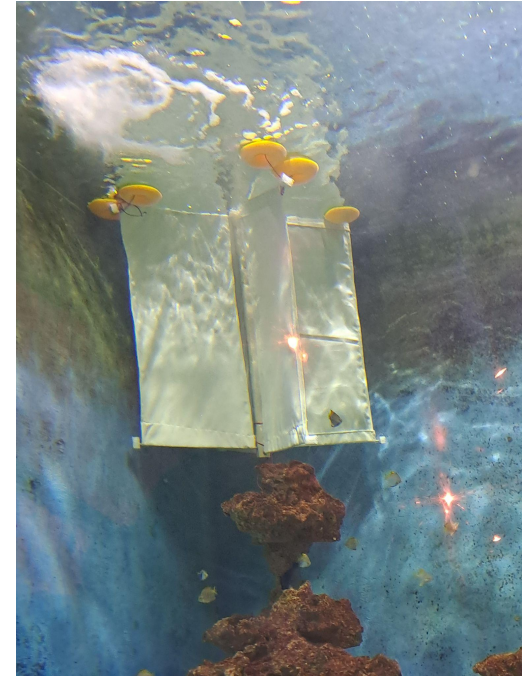




# Building the surface drifters: the platform

We looked for suitable designs  
Prototype developed by 2nd year students  
Buoyancy tests in Liege Aquarium

**Concepts:** depth of measurement, buoyancy



## Software development



Programming in **julia**

We provided the code to students:

- <https://tinyurl.com/drifter-rpi>
- Data logger, communication via SMS, post processing

**Concepts:** programming, data acquisition, optimizing data vs. resources for a given scientific question



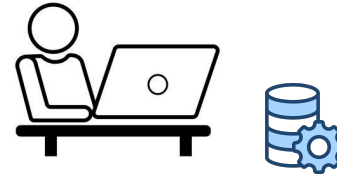
Raspberry Pi  
GPS antenna  
SIM card  
Battery

# Students assignment

Aims to cover the whole scientific process: from the question and field measurements to the analysis and scientific conclusions

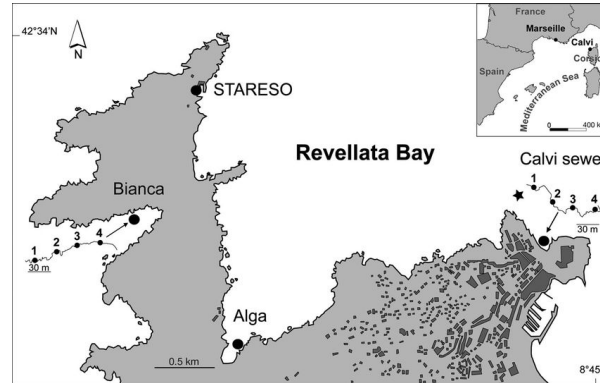
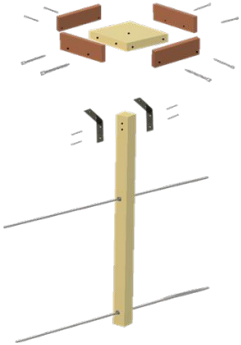


Raise of a scientific question  
related to surface dynamics



Data collection and  
treatment

Drifter's assemblage  
and deployment in the  
**Bay of Calvi**



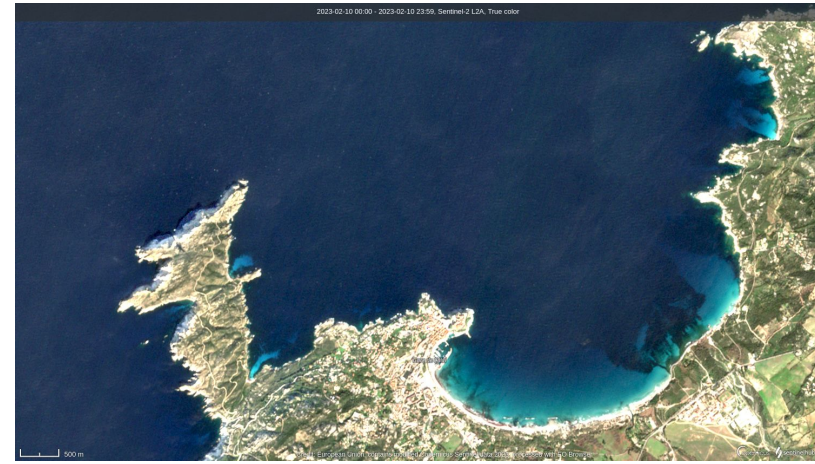
Analysis and  
conclusions on  
the raised  
question



# Deployment of drifters

Assembly of all drifters at STARESO

Design of measurement strategy: scientific question

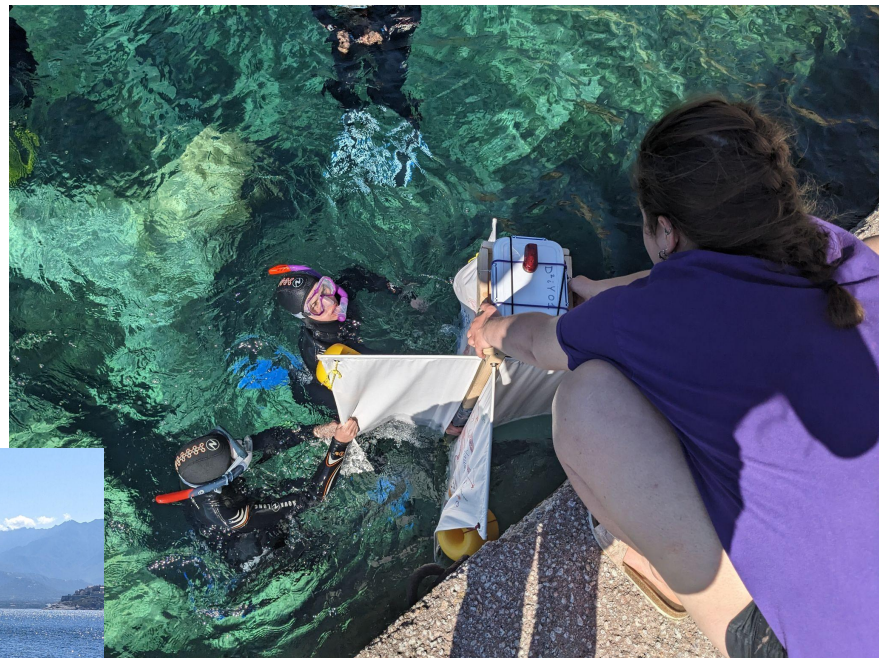


# Deployment of drifters





# Deployment of drifters



# Data acquisition, analysis of results, interpretation

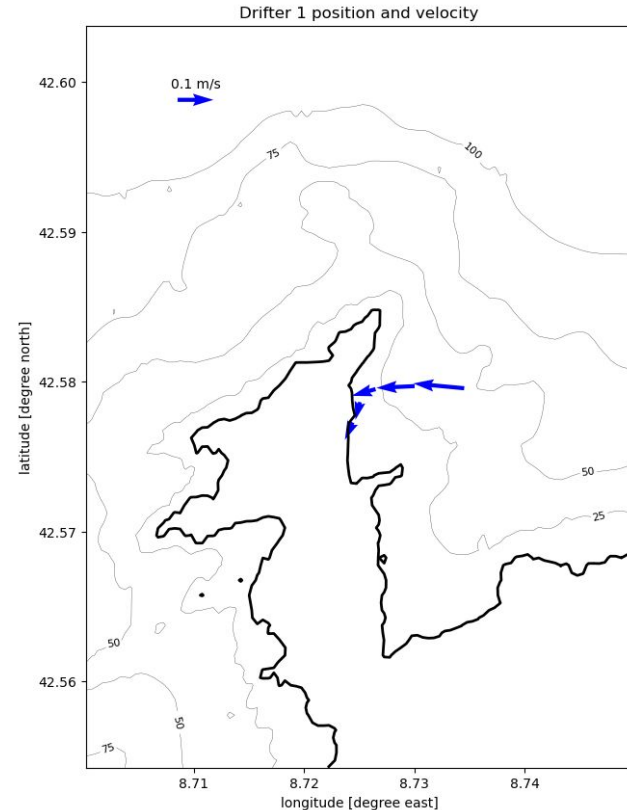
Julia notebook provided to students to:

- Extract the position corresponding to the deployment
- Convert position to velocity
- Apply a low-pass filter
- Available at <https://tinyurl.com/drifter-rpi>
- Use the in cloud computing environment from the Blue Cloud project to avoid installation issues

eosc | Blue-Cloud2026



Coastal Currents from Observations Virtual Lab



# Conclusions

- Multidisciplinary project
  - Demands wide range of skills from students
  - Students feel involved in the project
- Motivation  
Evolution of project from year to year

Lack of programming  
skills in typical  
oceanography students

