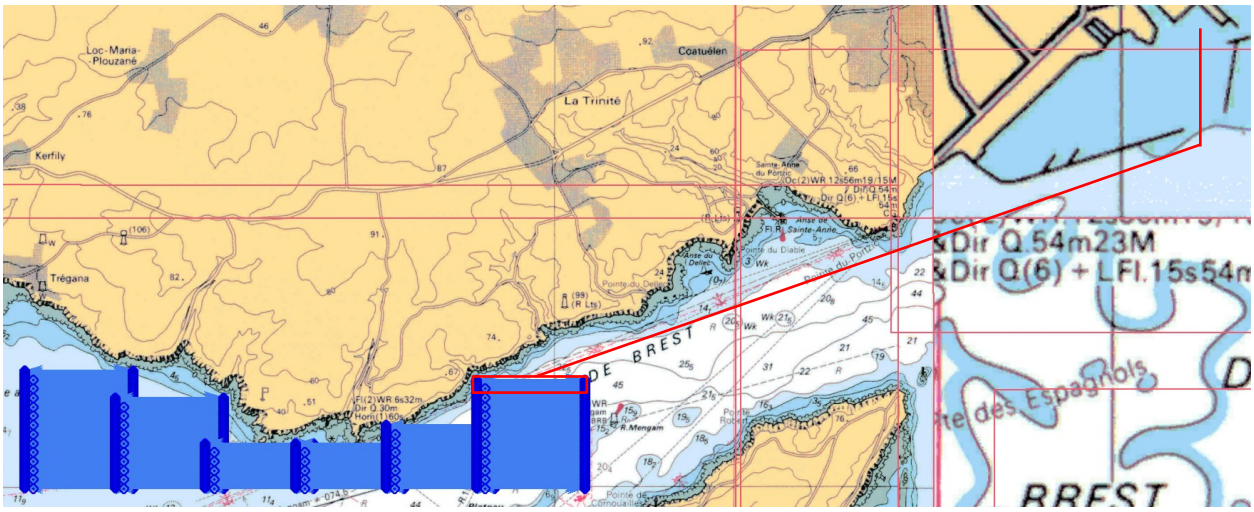
Boatbot Experiment June 5th 2019

Objective

- Test of secondary (and smaller) controller setup
- Gather Magnetic, GPS-Data on Brique 52
- Measure force on rope connecting to depressor

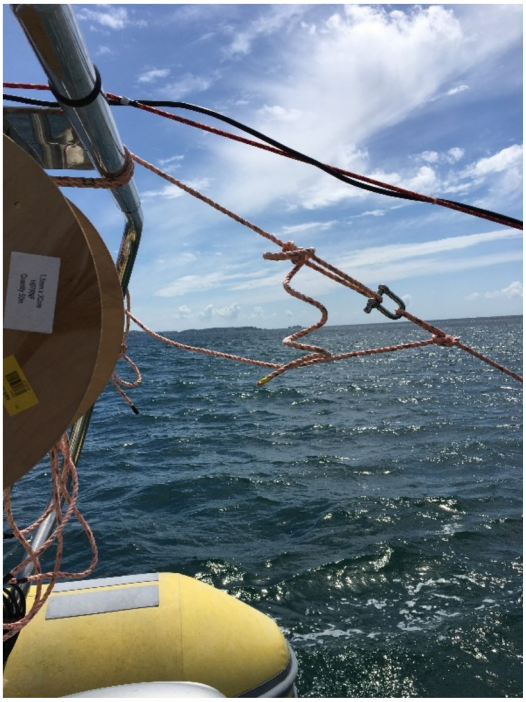
Area of Deployment

Brique 52 of search area for La Cordelière and way from and to harbour



Maritime Weather

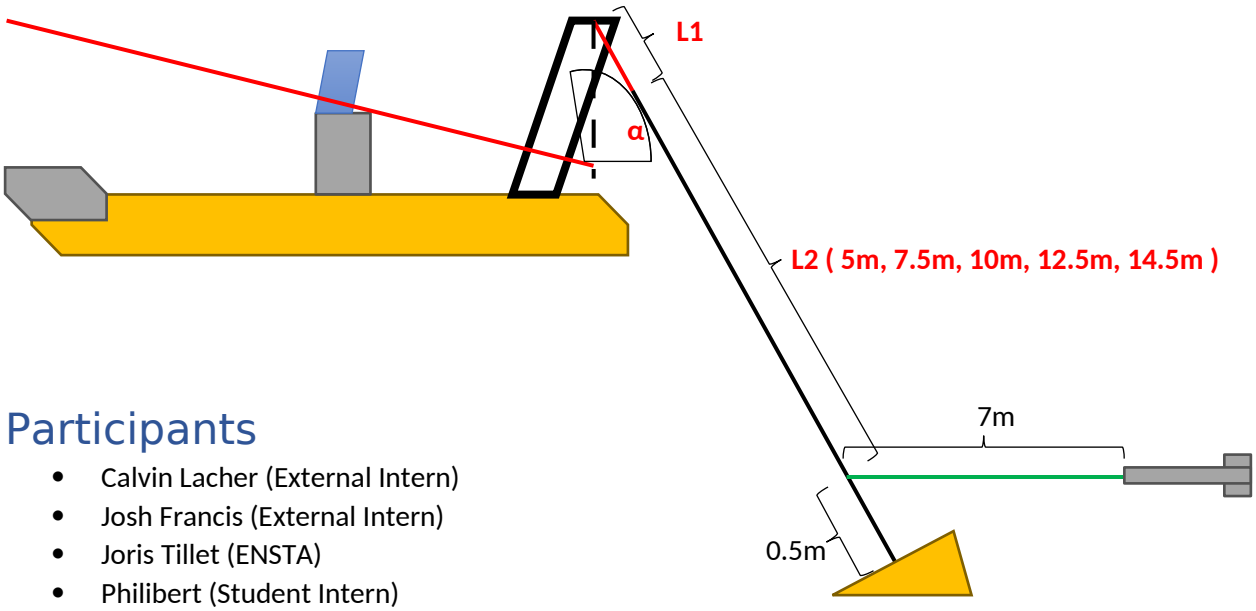
- Low to high tide
- 3kts currents
- Wind from West to Southwest



Boatbot Setup

- L1 ≈ 0.5m
- L2 = 12.5m
- α ≈ 57°
- Big Controller Box
  - See config.yaml for controller setup
- Small Controller Box
  - See config.yaml for controller setup
- Depressor
- Magnetometer
- IMU, GPS

- Navigation Computer (Boatbot)
- Data Computer (Hydro)



Participants

- Calvin Lacher (External Intern)
- Josh Francis (External Intern)
- Joris Tillet (ENSTA)
- Philibert (Student Intern)

Results

- Brique 52 completed
  - Retrieved magnetic data
  - Retrieved GPS data
- Water depth: 15-50m
- Sensor Depth:
  - Magnetometer: ~ 7m
  - Depressor: ~ 7.5m

Problems

- RTK-Connection not stable
- Strong currents
  - made going from west to east difficult without putting very high stress on depressor rope (highest measured: **333.5N**, maximum likely higher)
  - difficult to keep constant speed of 3-5kts during brique
- Secondary controller box replaced with primary because controller output led to boat going in circles
- Boat goes in snake lines at higher speeds
- Depressor and Magnetometer likely too shallow to acquire any meaningful data