

Systeme d'Observation du Niveau des Eaux Littorales SONEL



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+

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Chair GLOSS GE

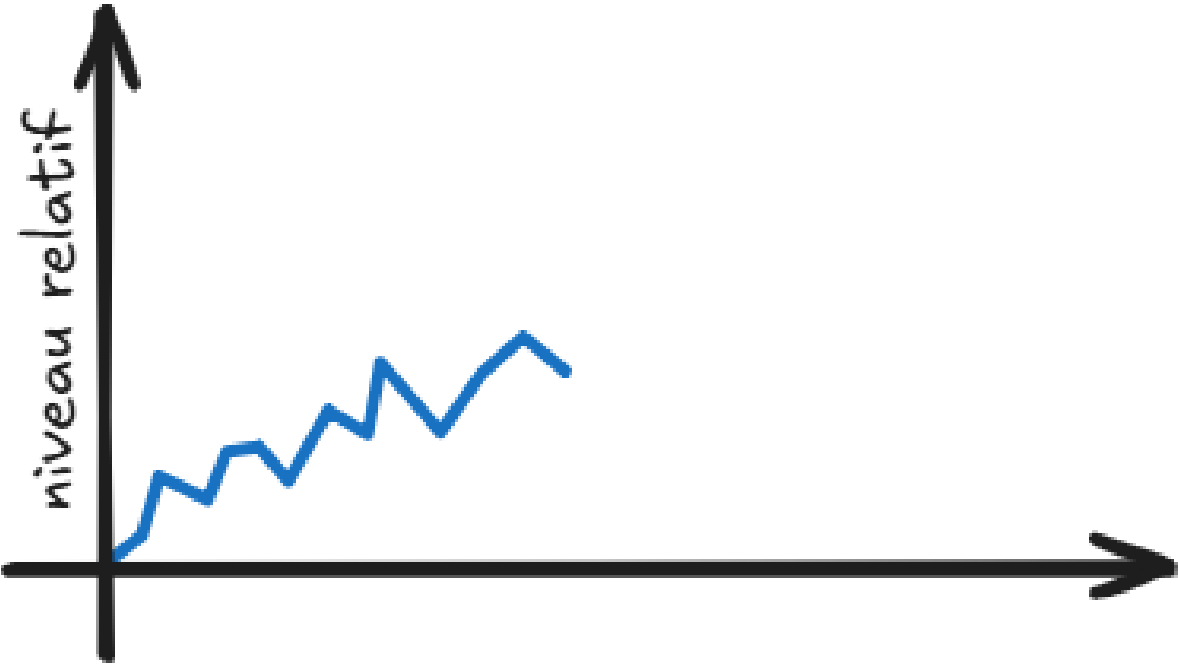


Saint-Quai-Portrieux, août 2026



Brest
1679

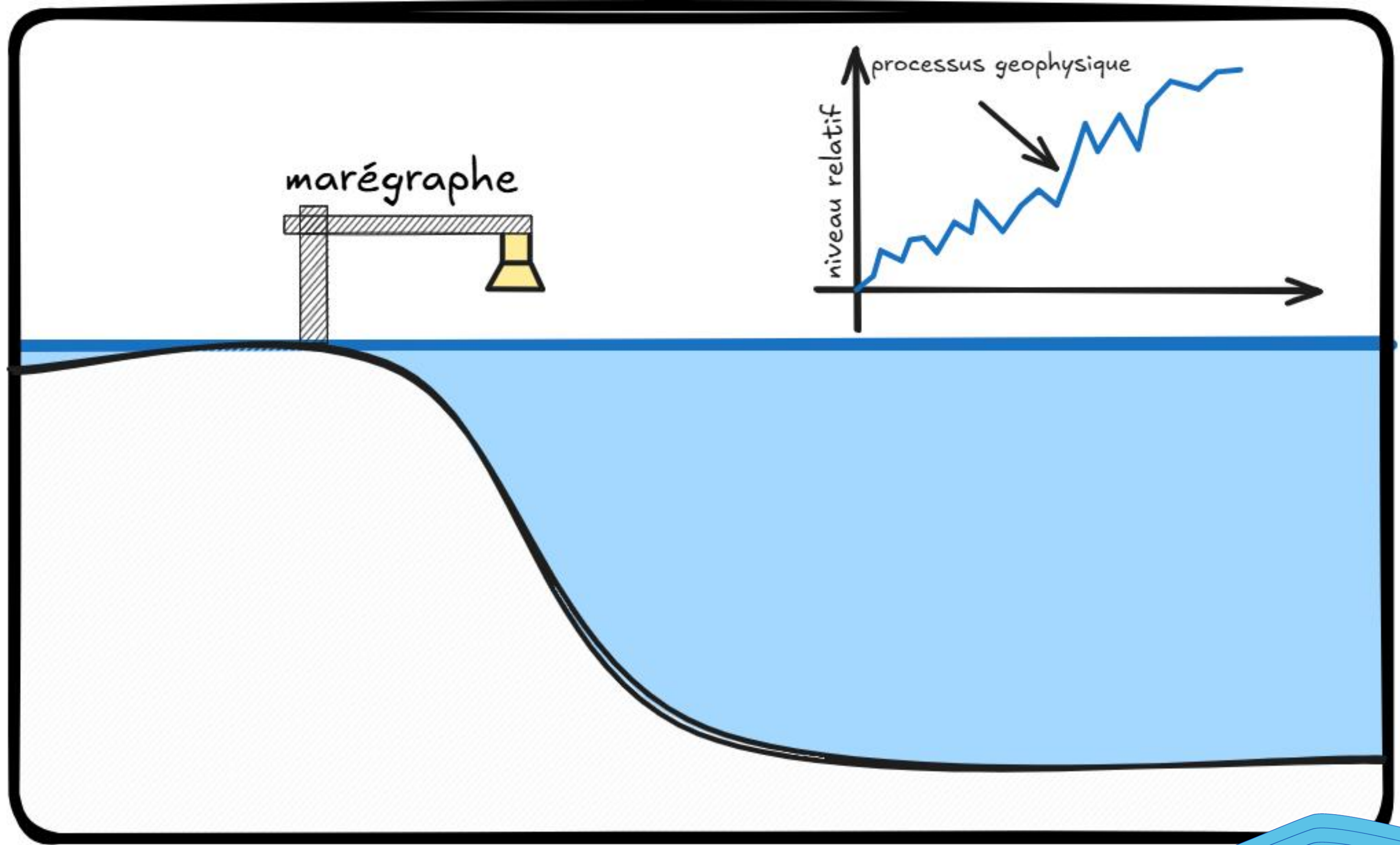
marégraphe

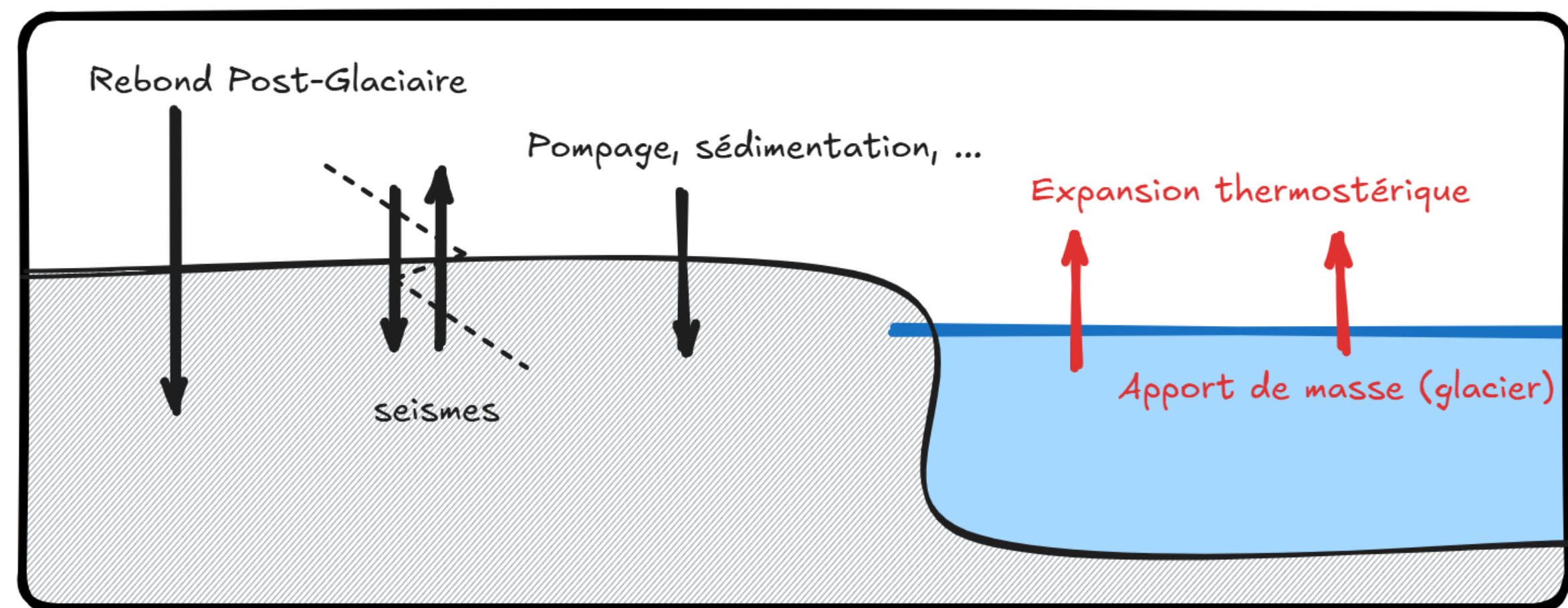
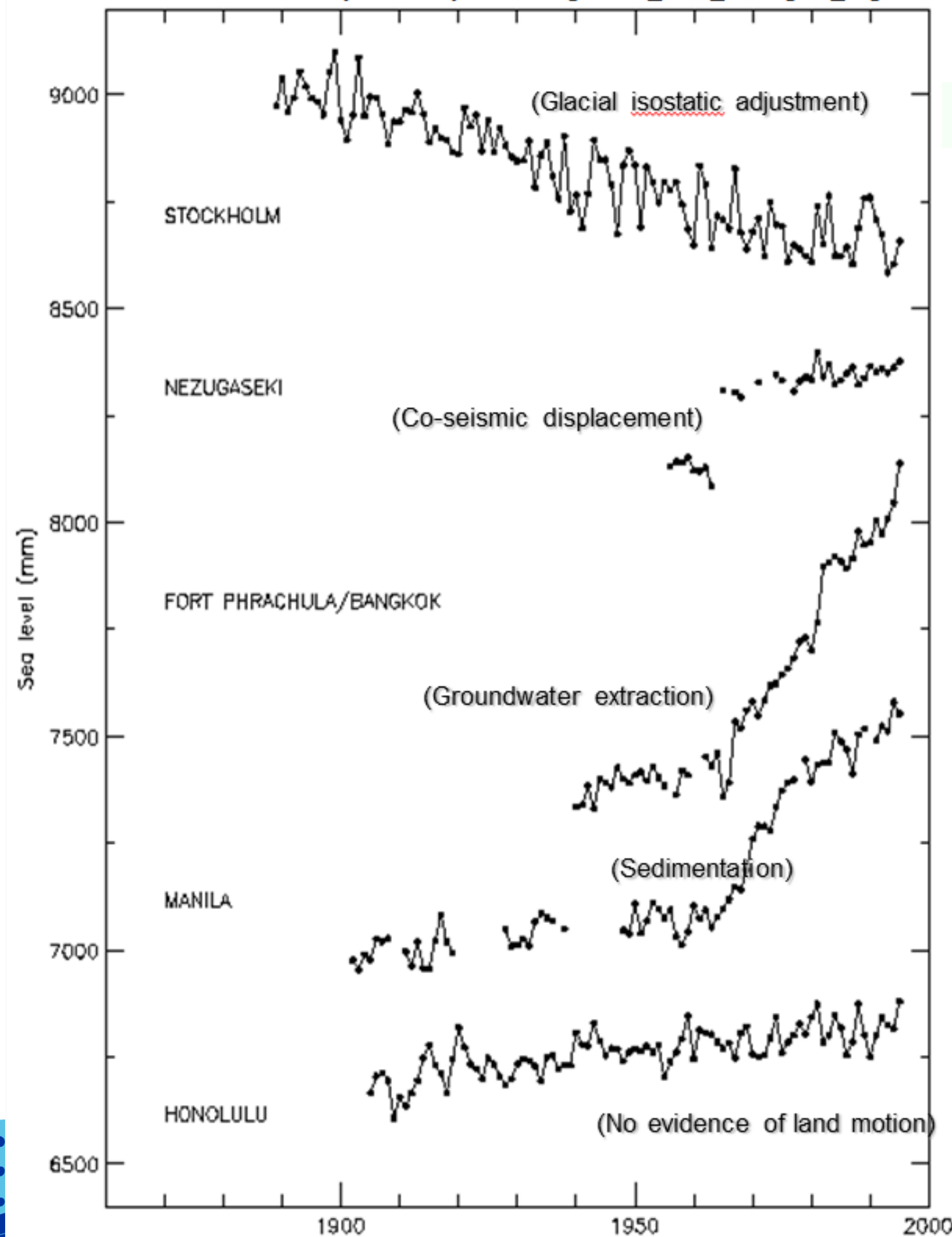


Jean PICARD (1620 - 1682)



Philippe de La Hire (1640-1718)

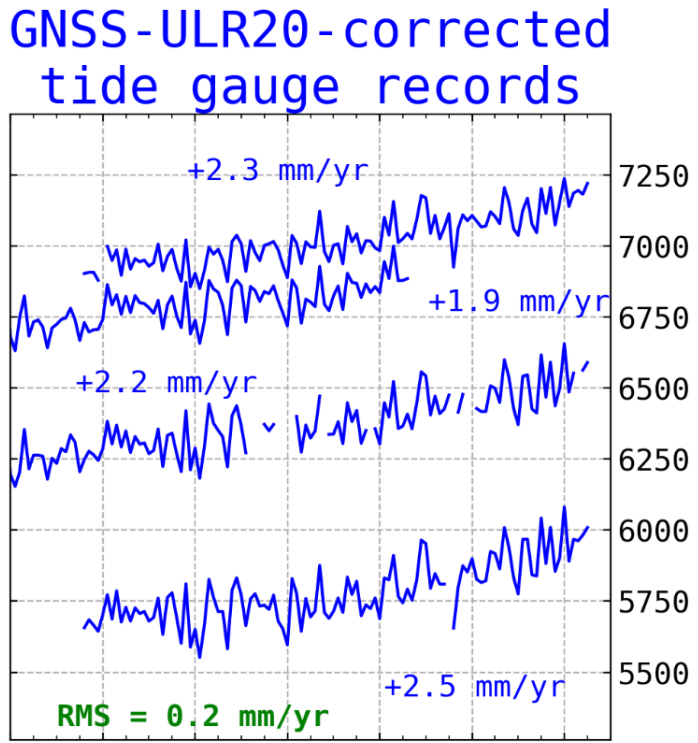
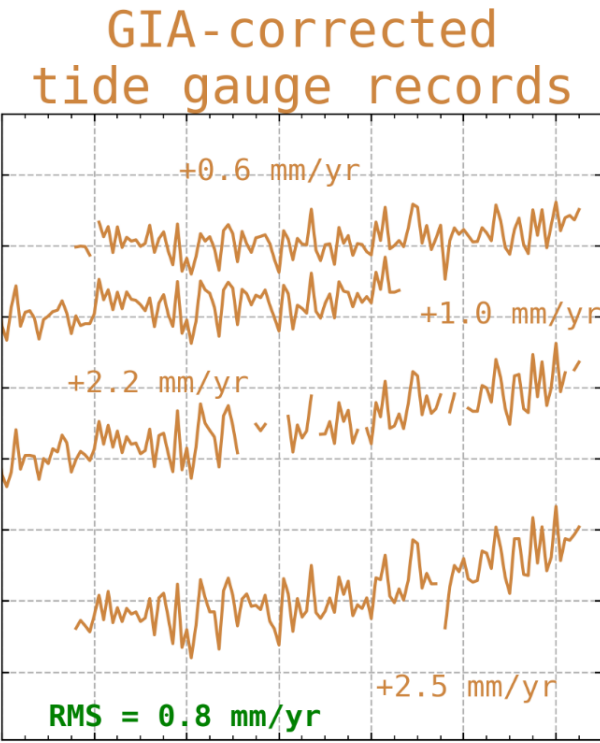
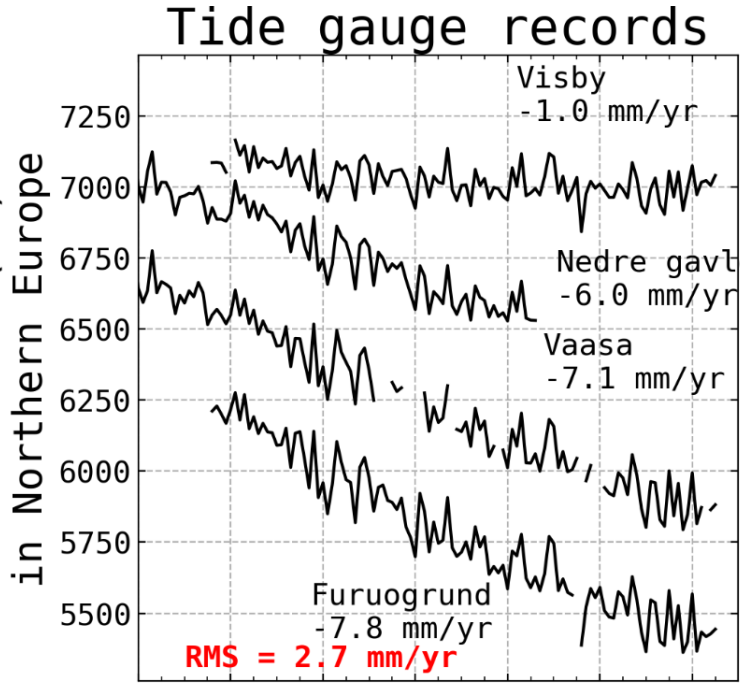
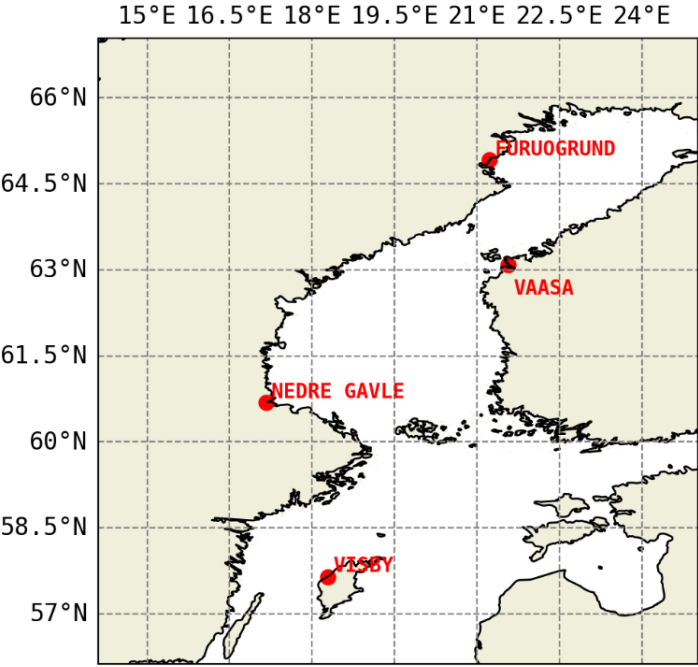




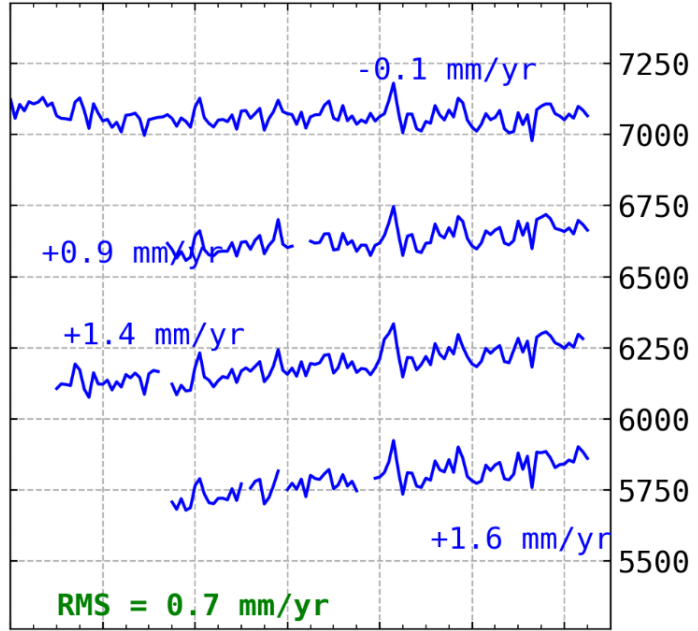
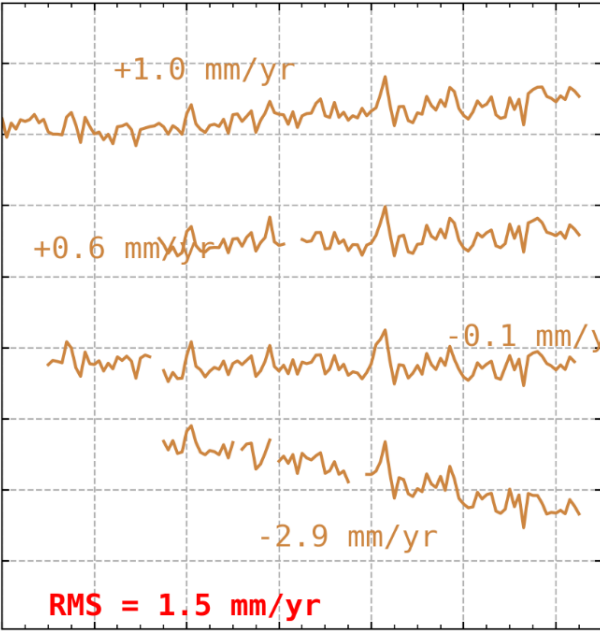
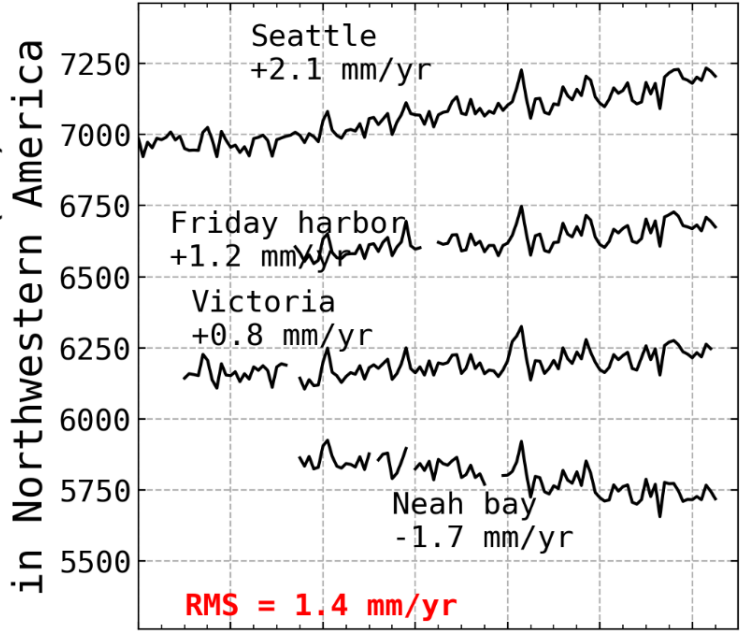
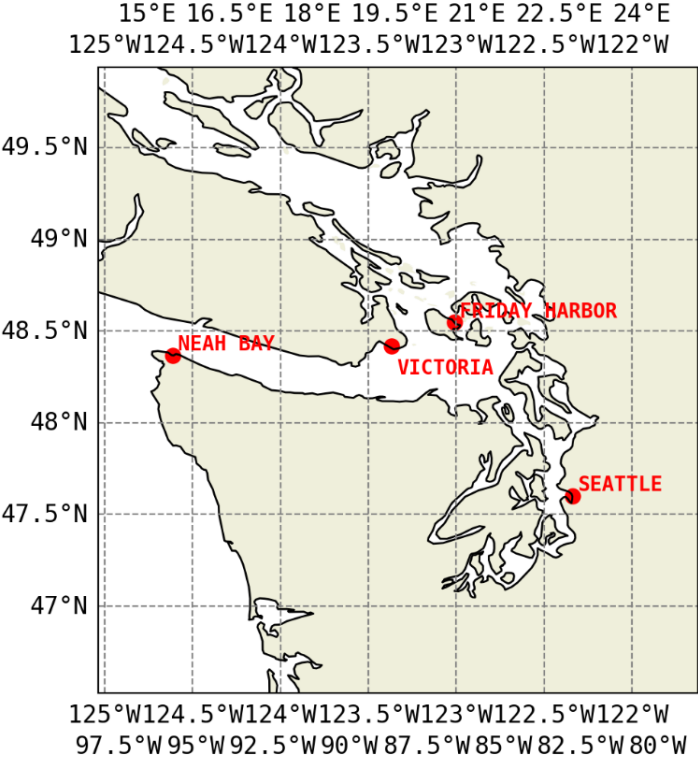
**Comment observer les mouvements
verticaux du sol avec une précision d'une
fraction du mm/an ?**



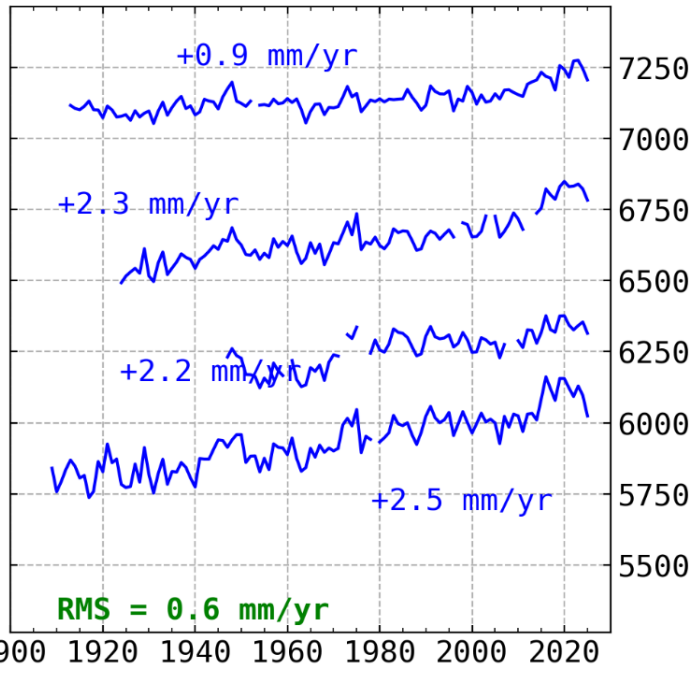
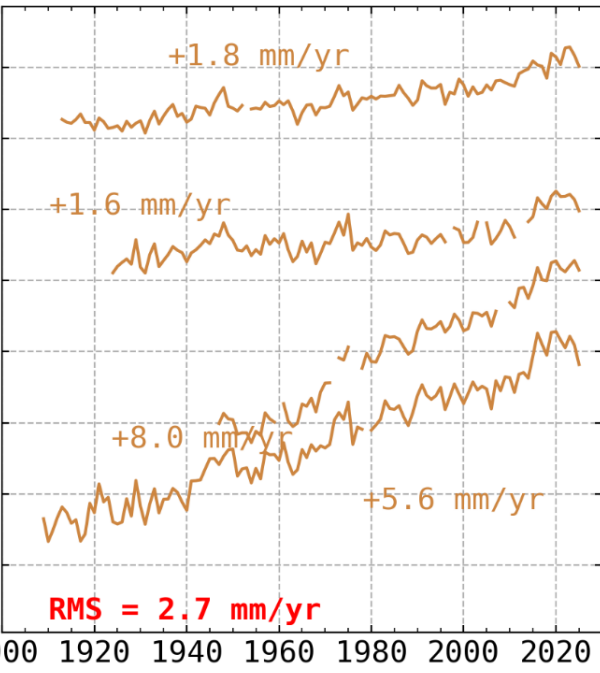
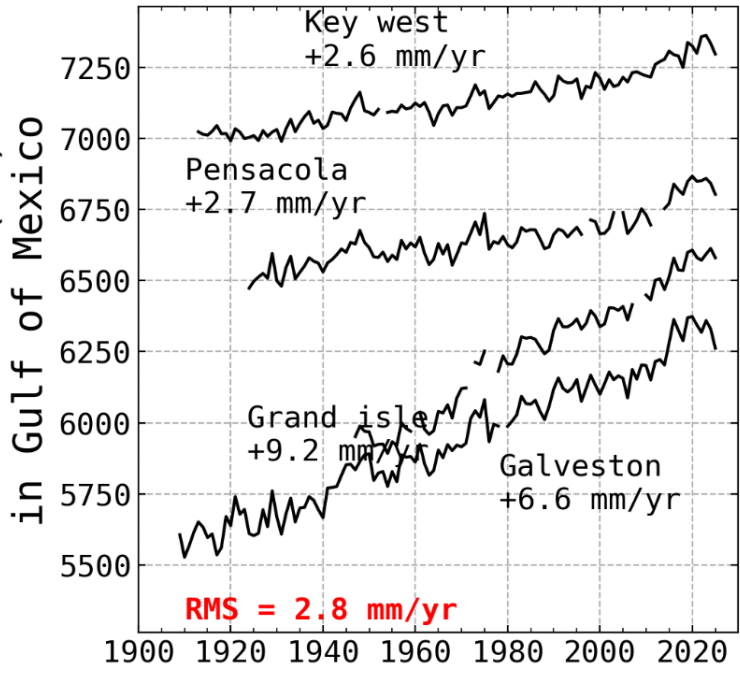
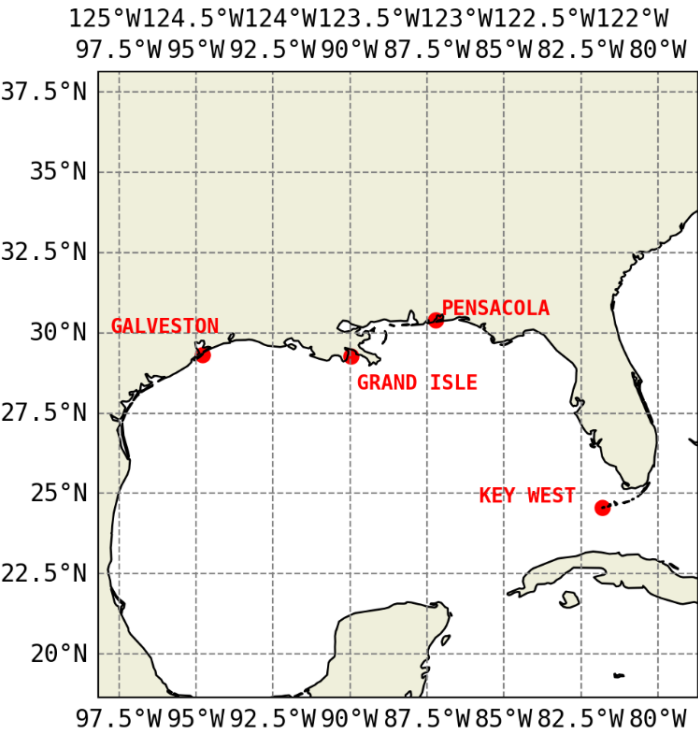
Mer Baltique

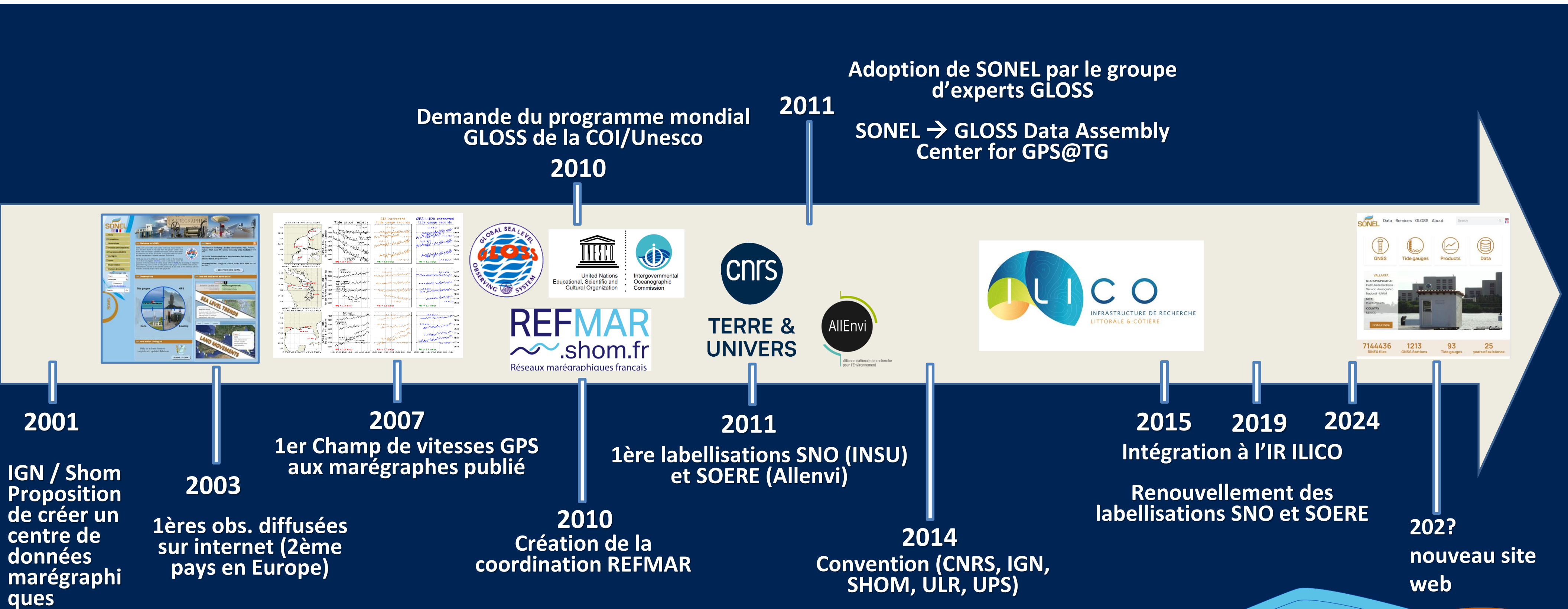


Amérique du Nord



Golfe du Mexique



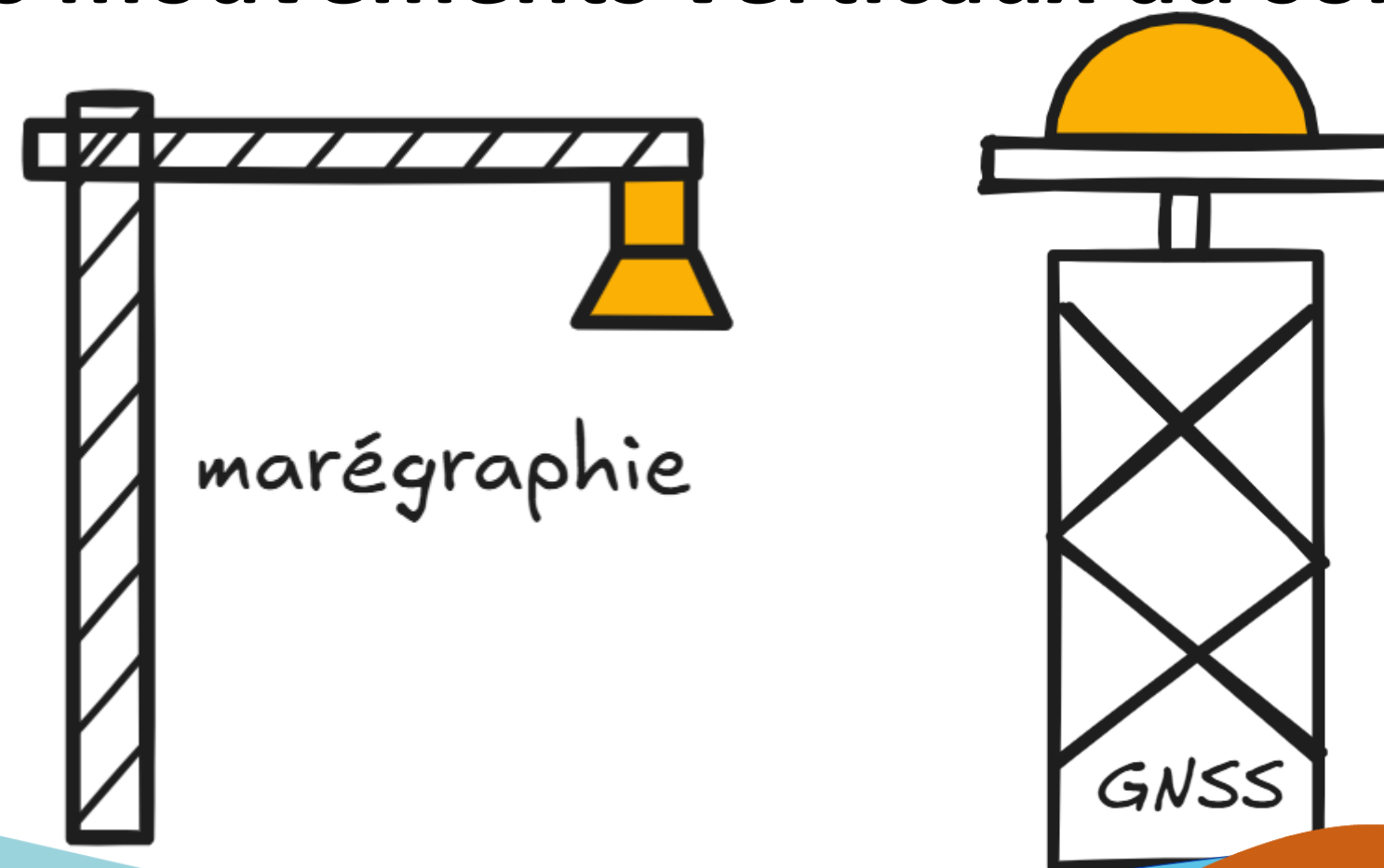


Décrire et comprendre les composantes des variations long terme du niveau de la mer

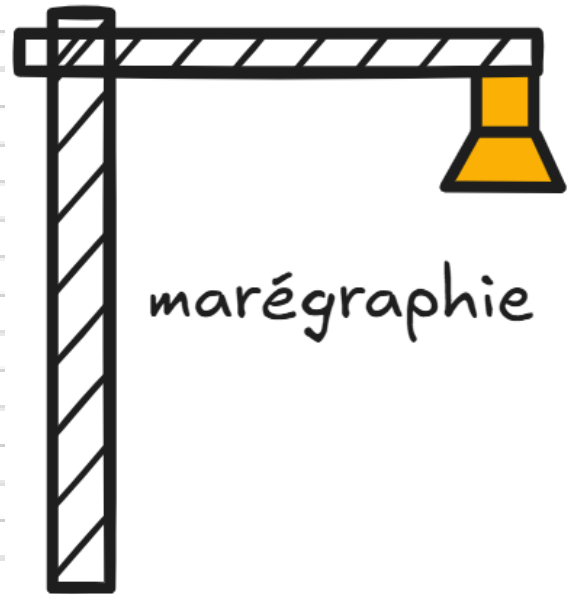
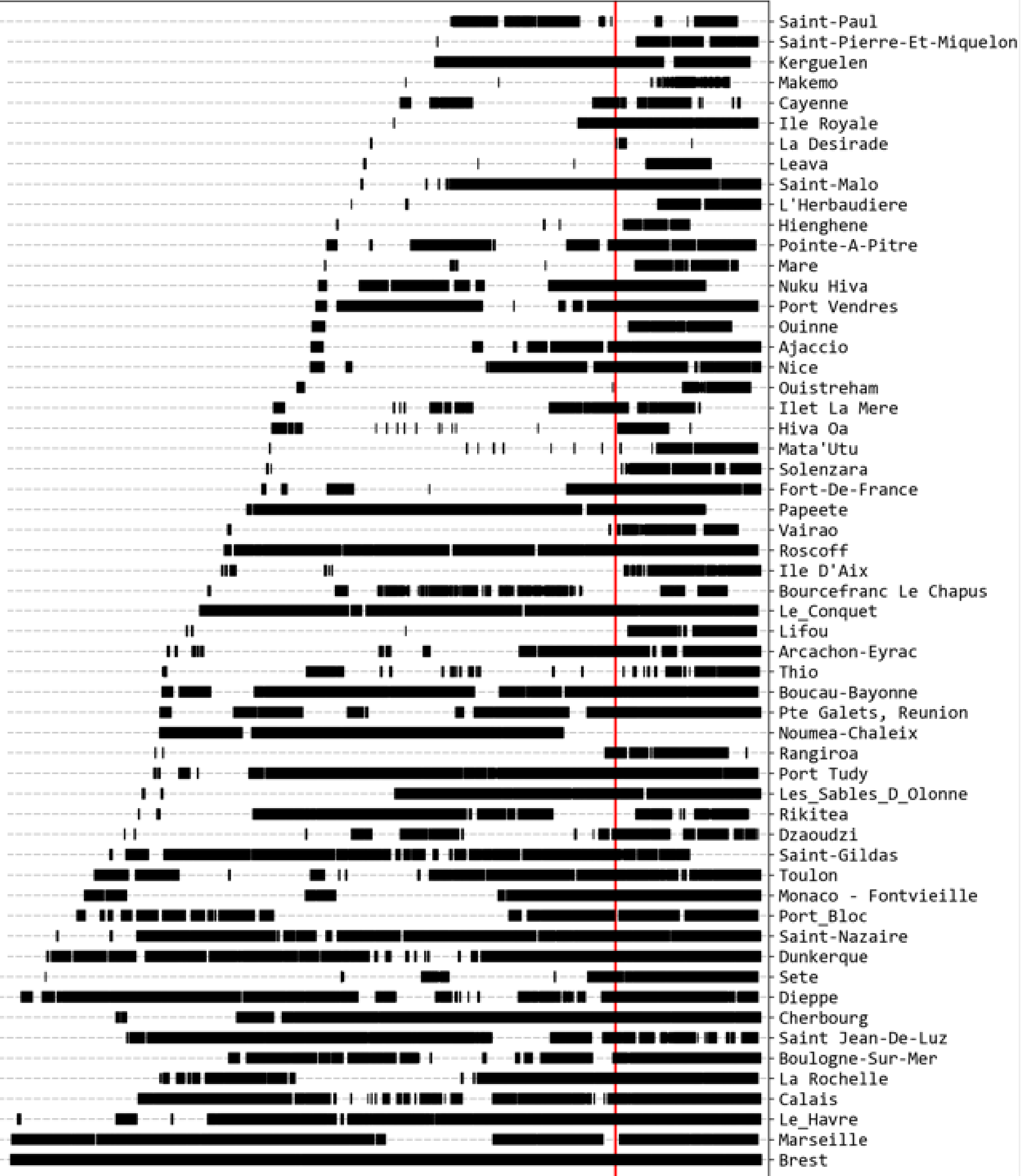
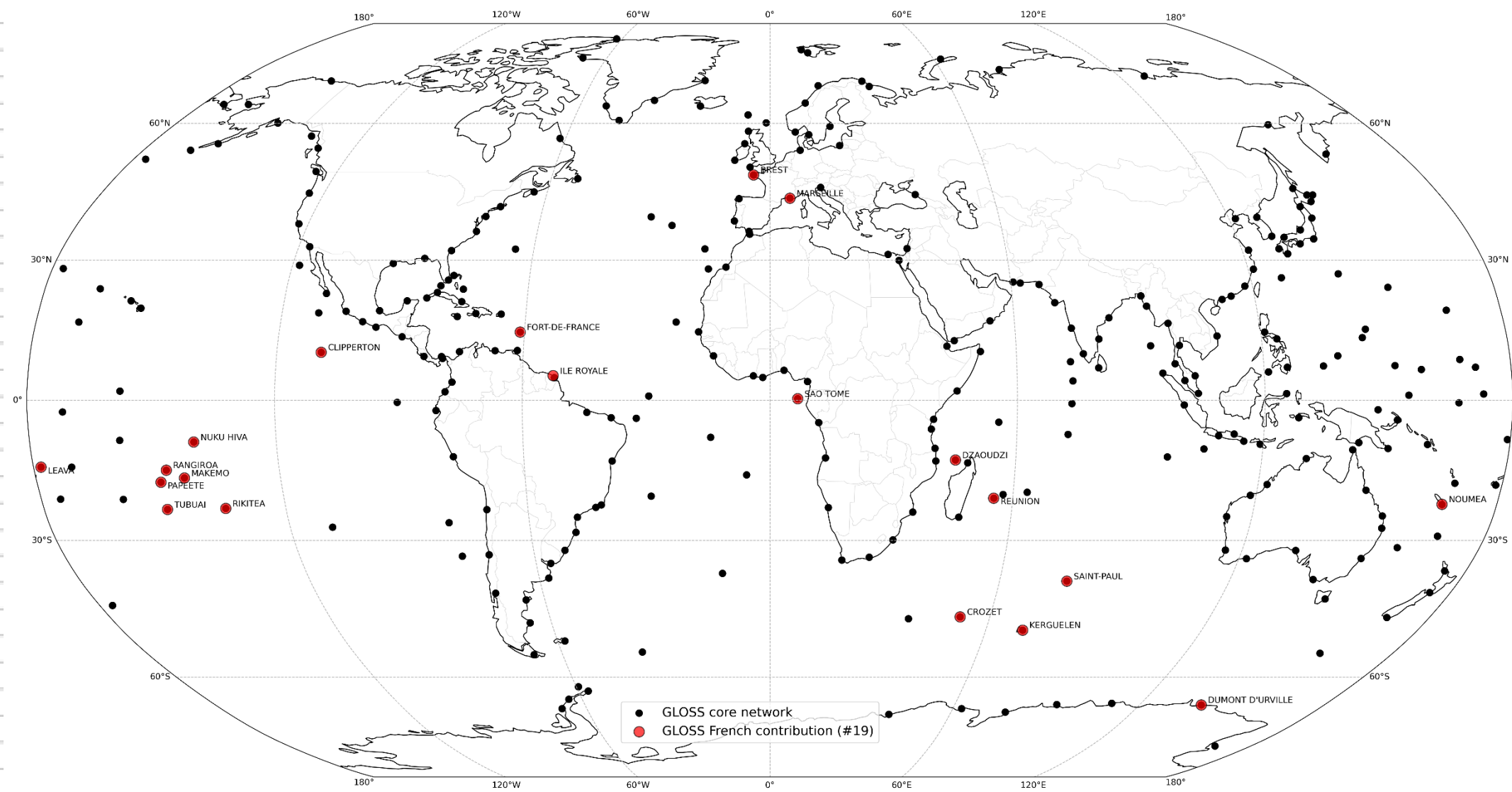
2 observables :

- (1) Le niveau marin
- (2) Les mouvements verticaux du sol

2 techniques de mesure :

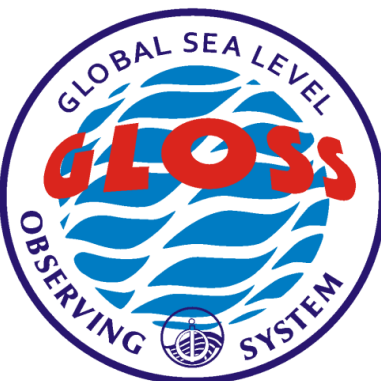


GLOSS Core Network



REFMAR
shom.fr
Réseaux marégraphiques français

Mise en place de REFMAR et SONEL



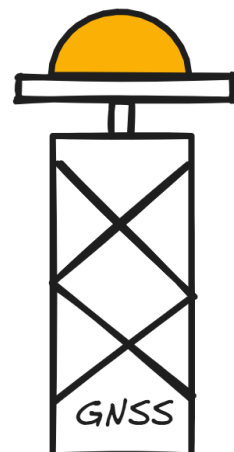
IOC



Global Ocean Observing System



VLIZ : Temps réel



Depuis 2011 Data Assembly Center (DAC) pour le programme mondial GLOSS

- ➔ fourniture des vitesses verticales du sol co-localisées aux marégraphes
- ➔ fourniture des fichiers RINEX des stations GNSS permanentes co-localisées aux marégraphes



Solution ULR20

> 1000 stations

↓

ULR

NGL

JPL

GFZ

GNSS solutions

Solution : ULR20

Solution(s) ⓘ ▾

Map

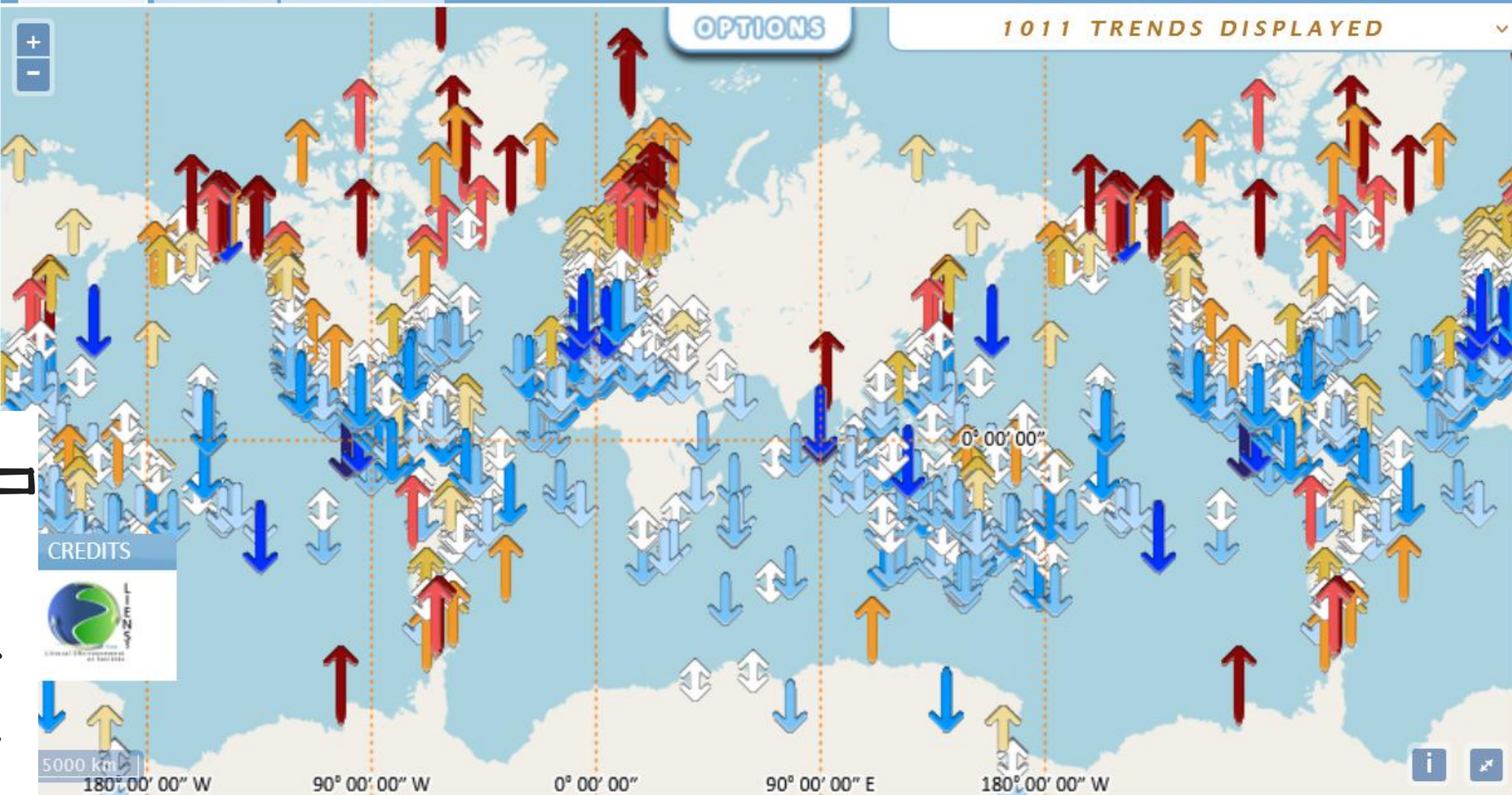
About

Download

OPTIONS

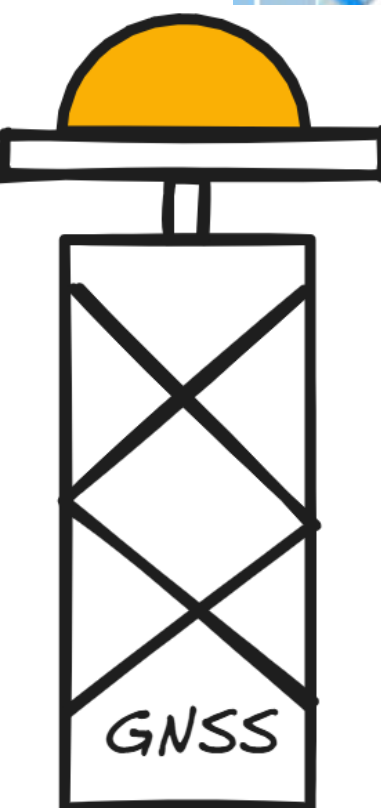
1011 TRENDS DISPLAYED ▾

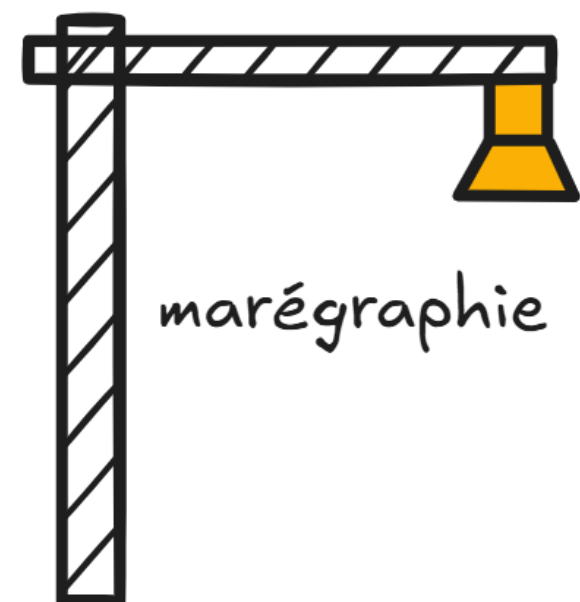
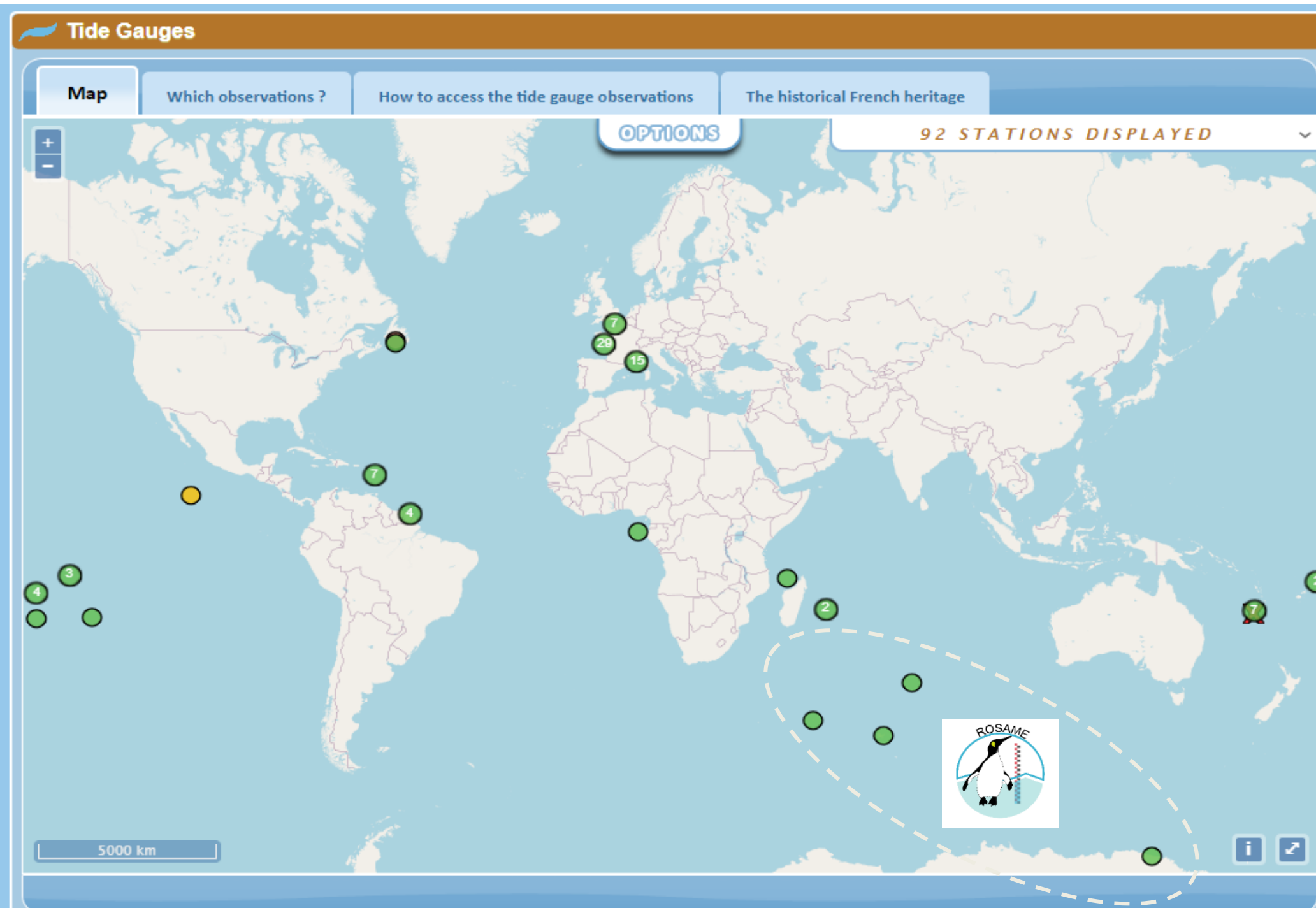
Legend
(mm/year)



- ↑ > +6
- ↑ > +4
- ↑ > +2
- ↑ > +1
- ↑ > +0.5
- ↕ -0.5/+0.5
- ↓ < -0.5
- ↓ < -1
- ↓ < -2
- ↓ < -4
- ↓ < -6

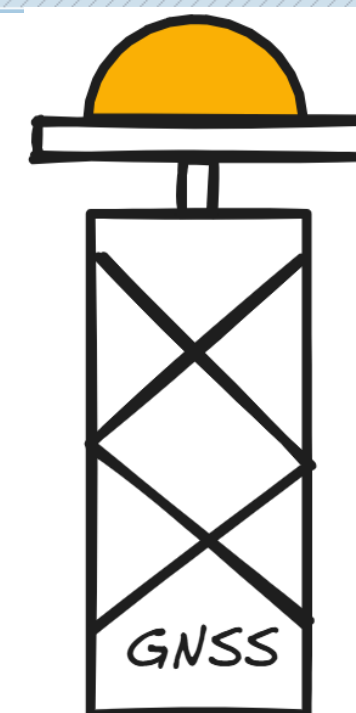
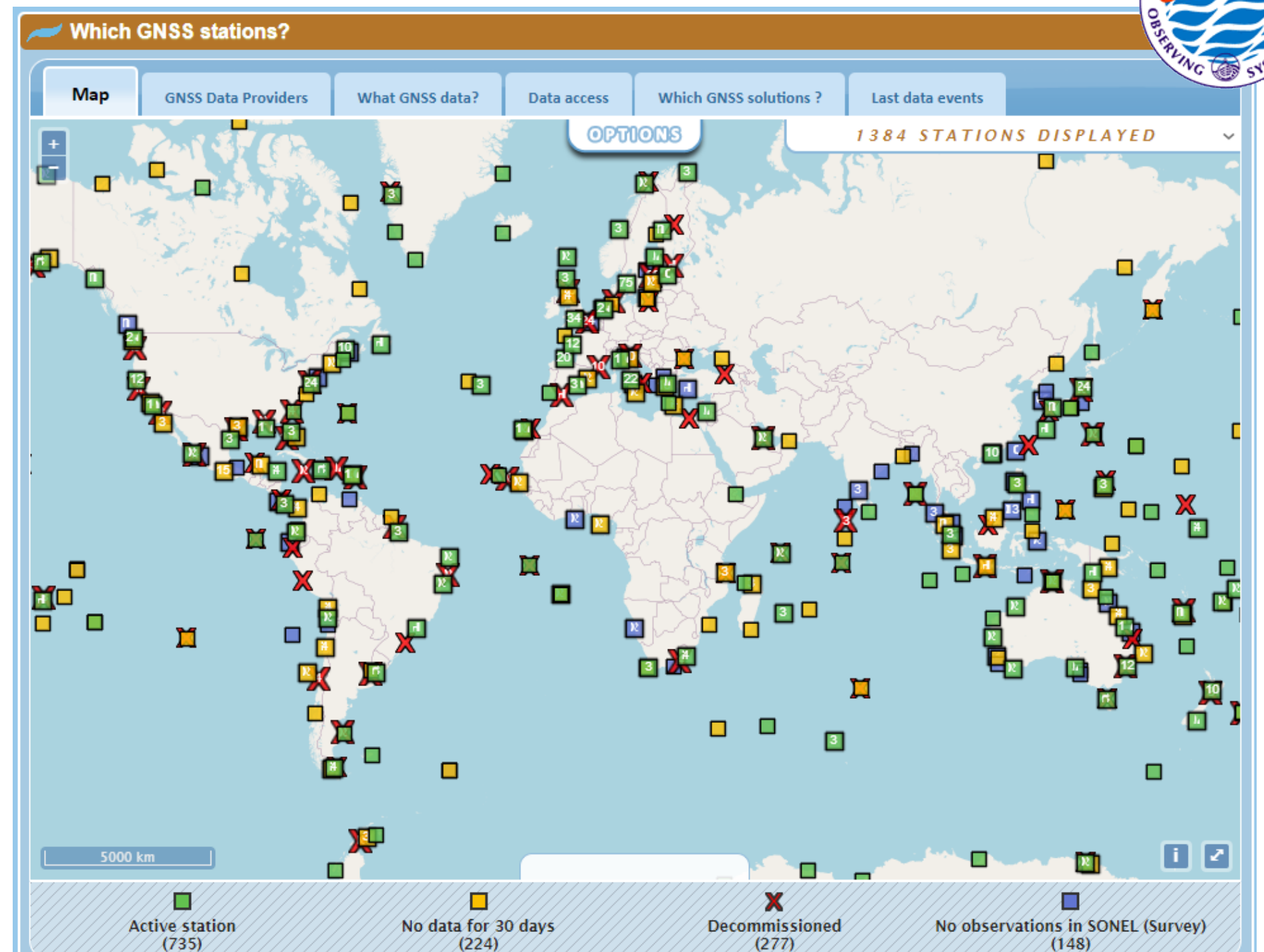
CREDITS





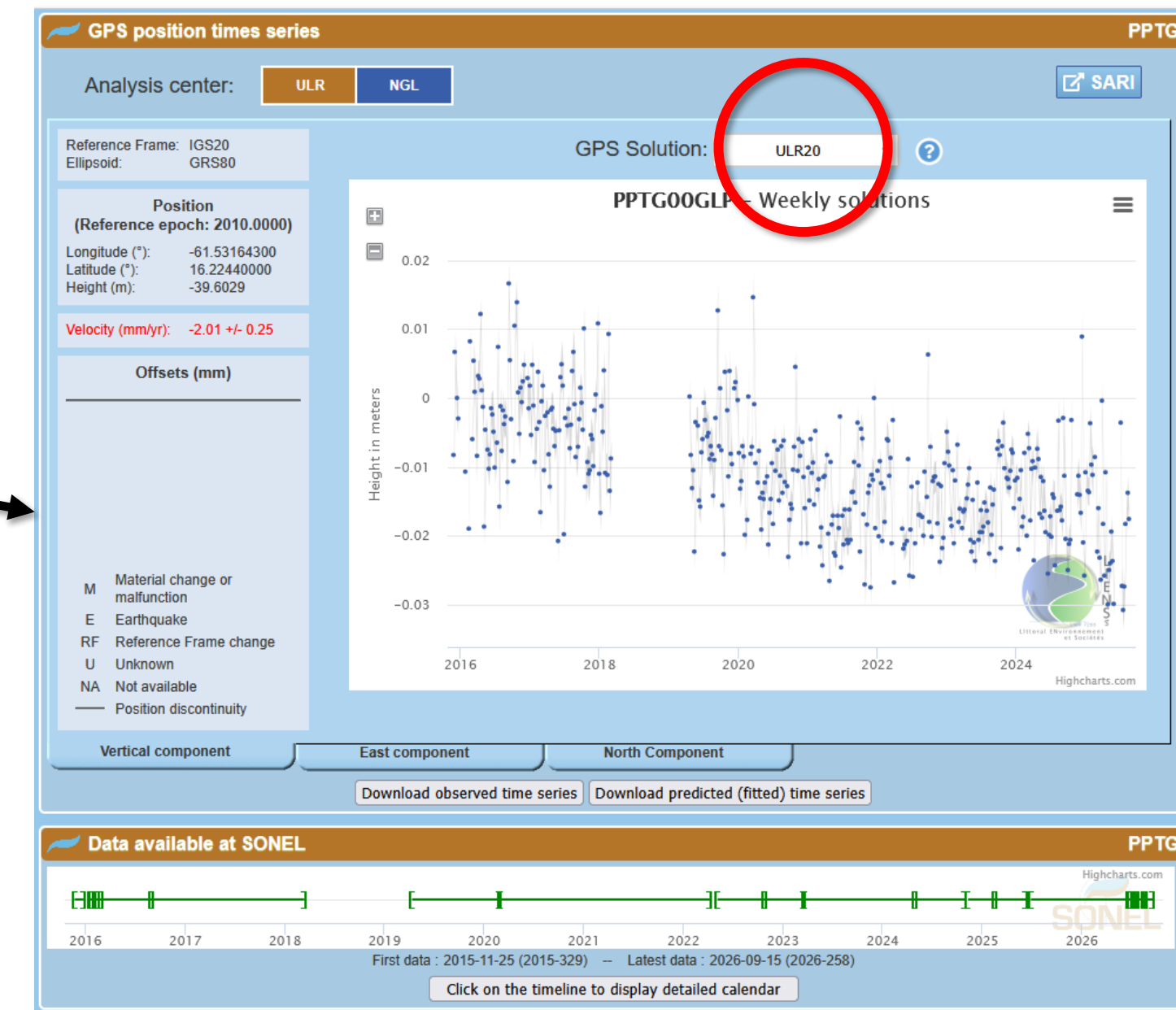
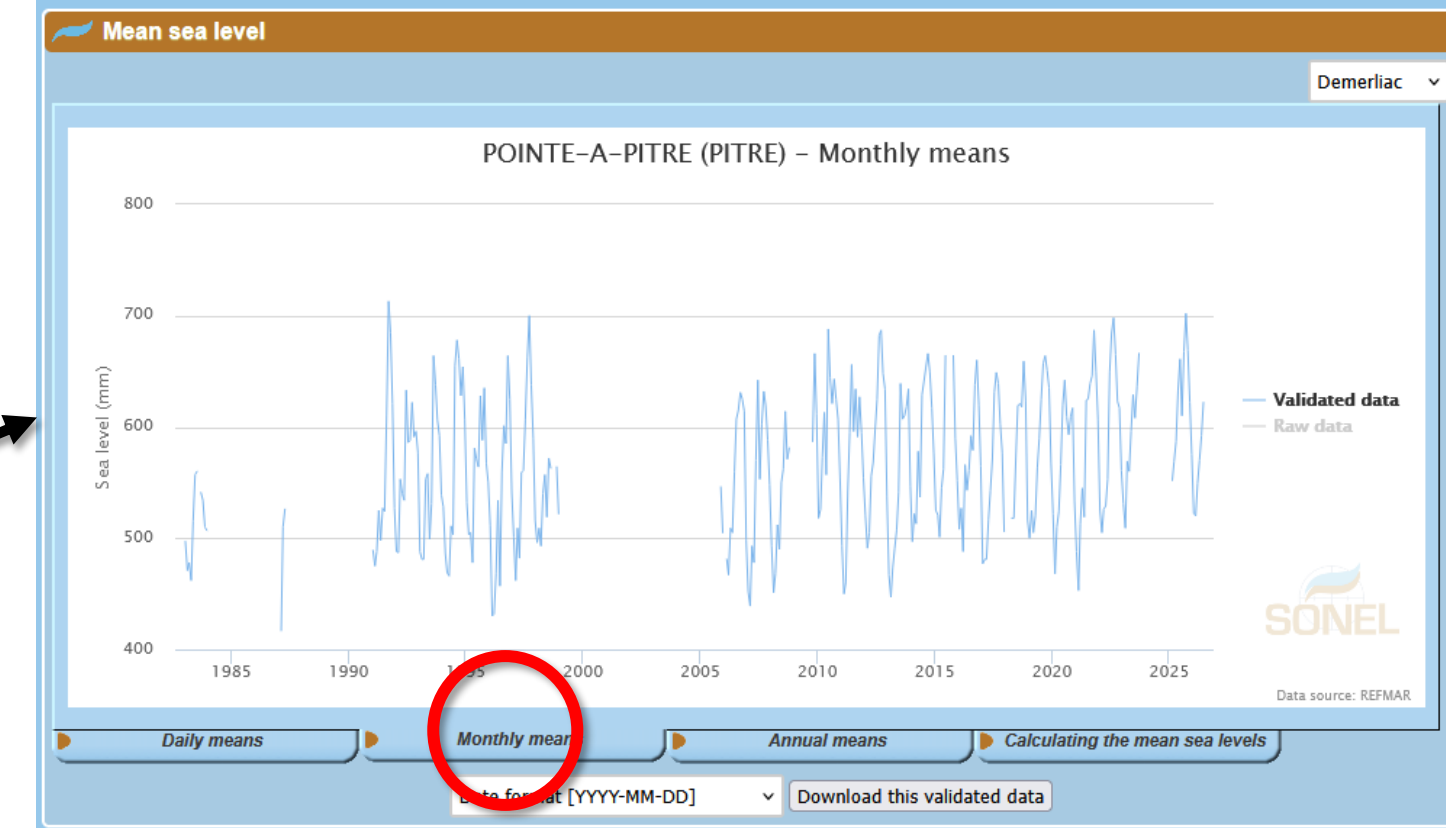
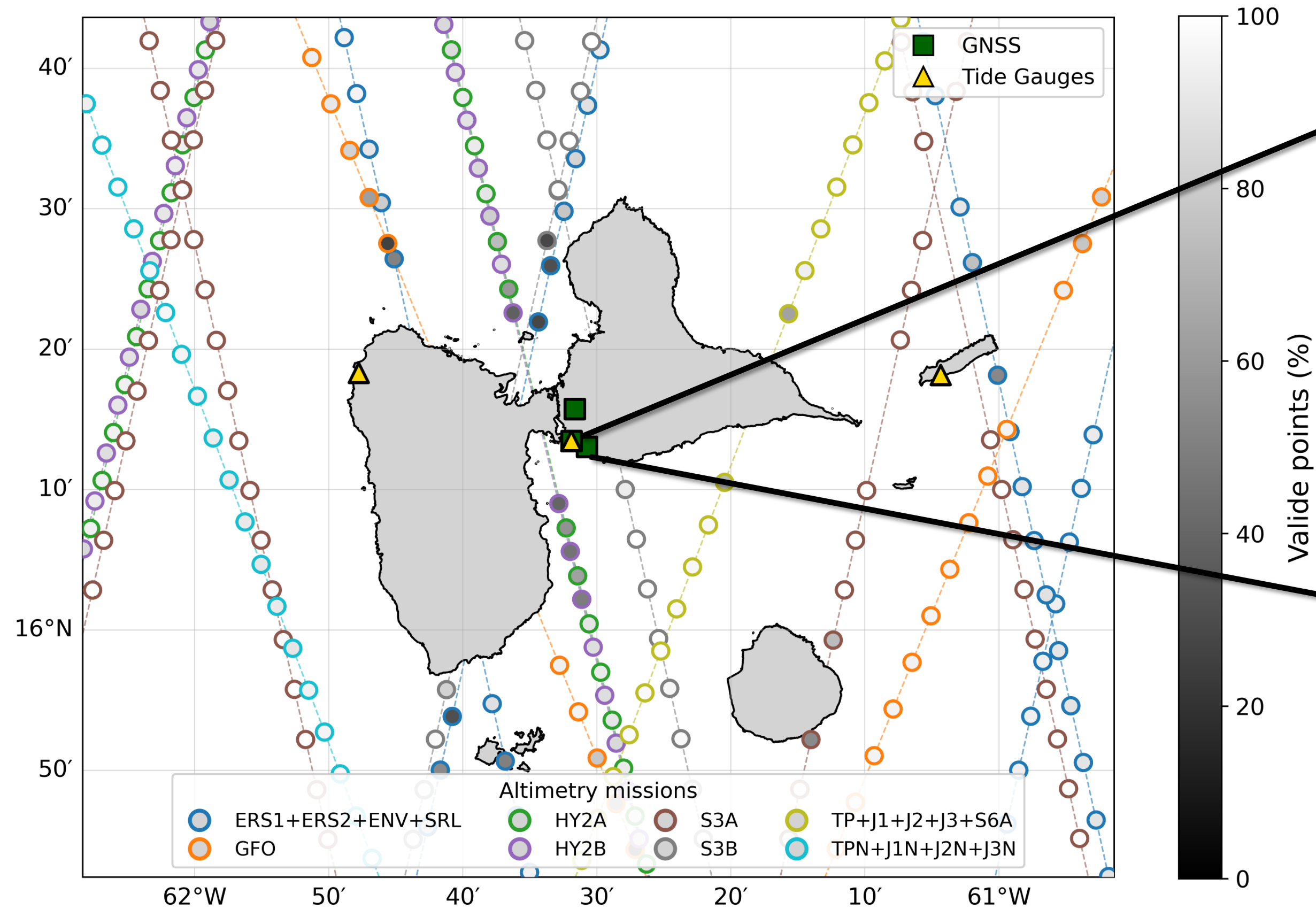
marégraphie

- Extension **mondiale** mais nationale
- **93** marégraphes
- Alimentation de la banque mondiale du **PSMSL**

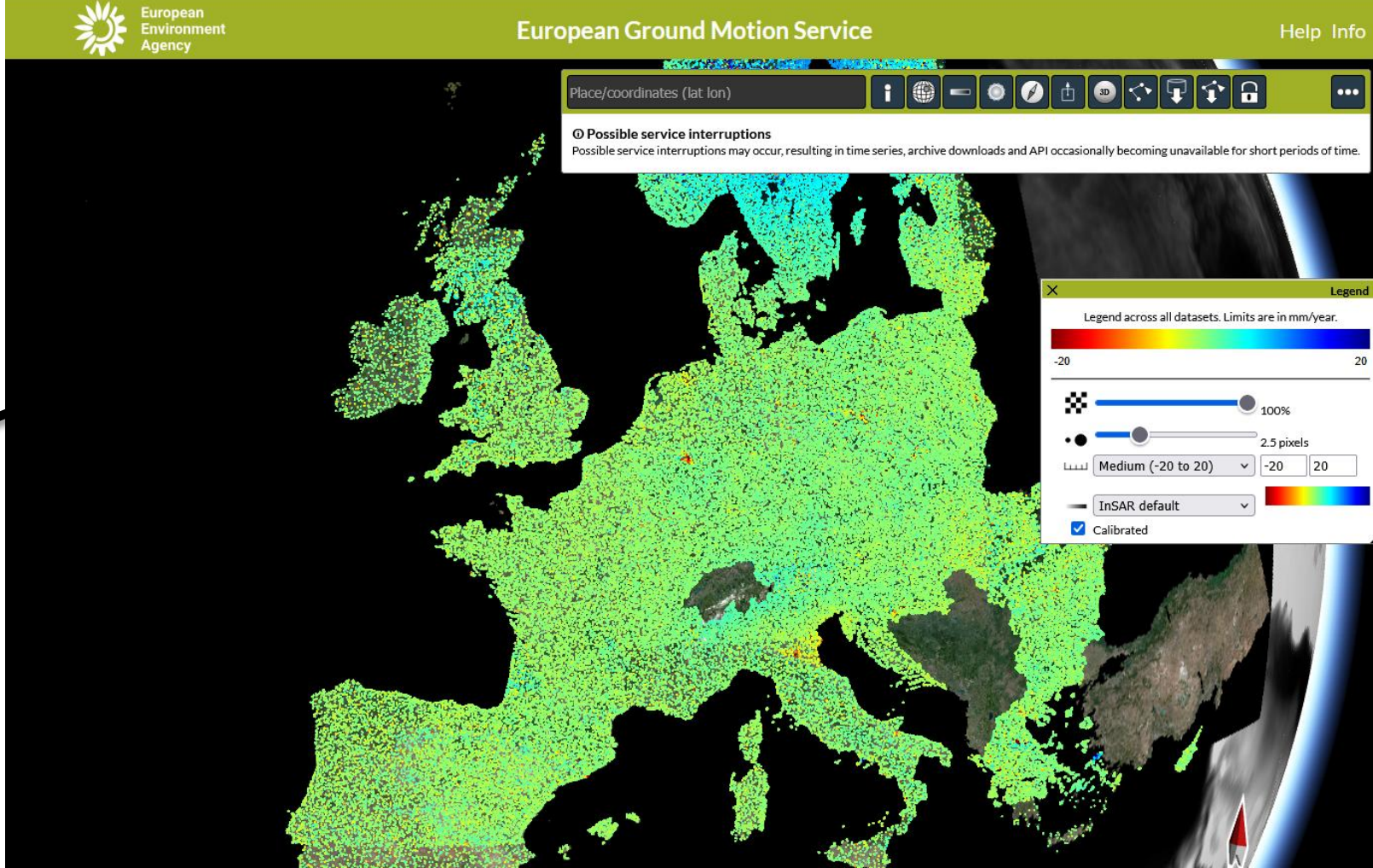
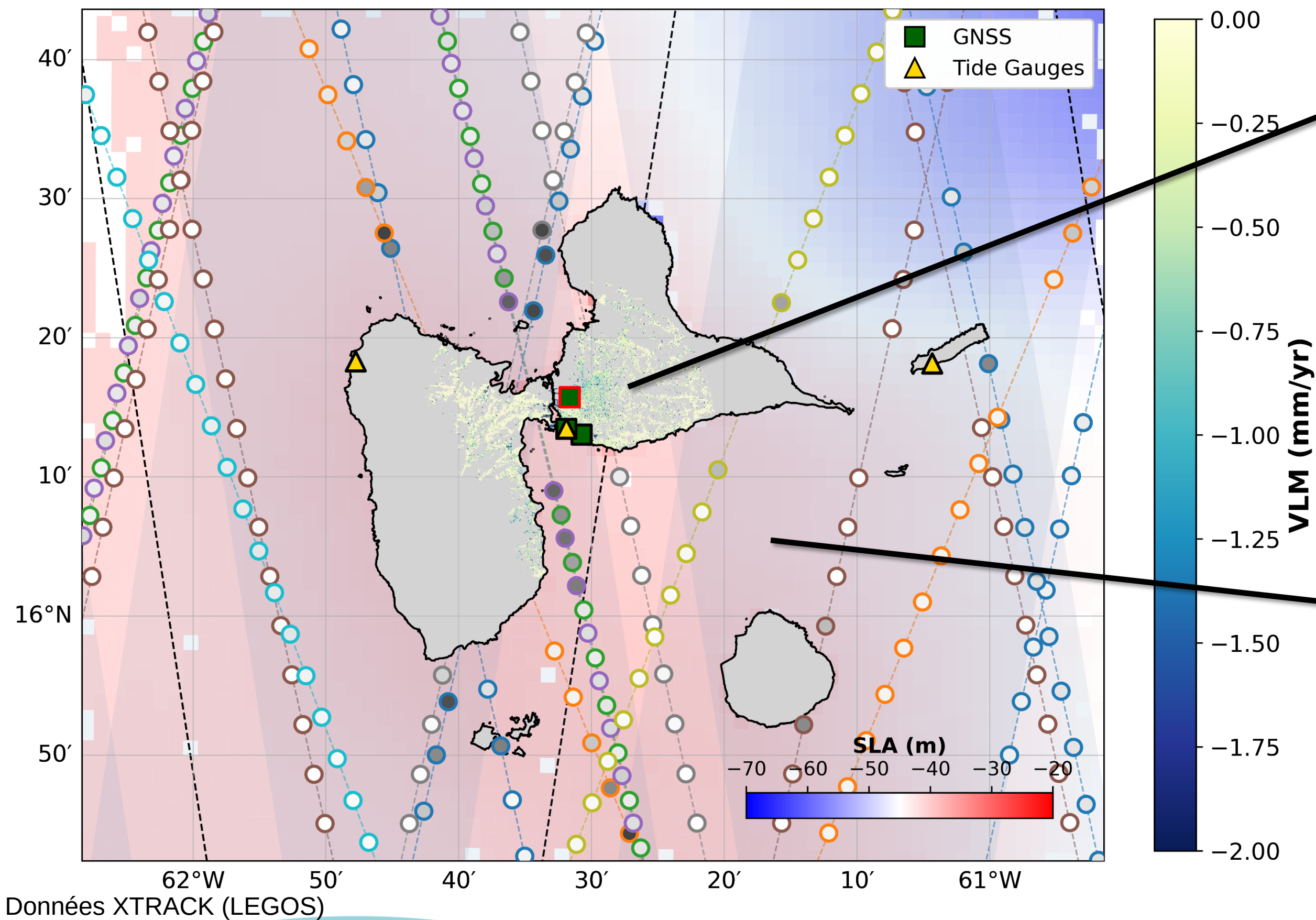


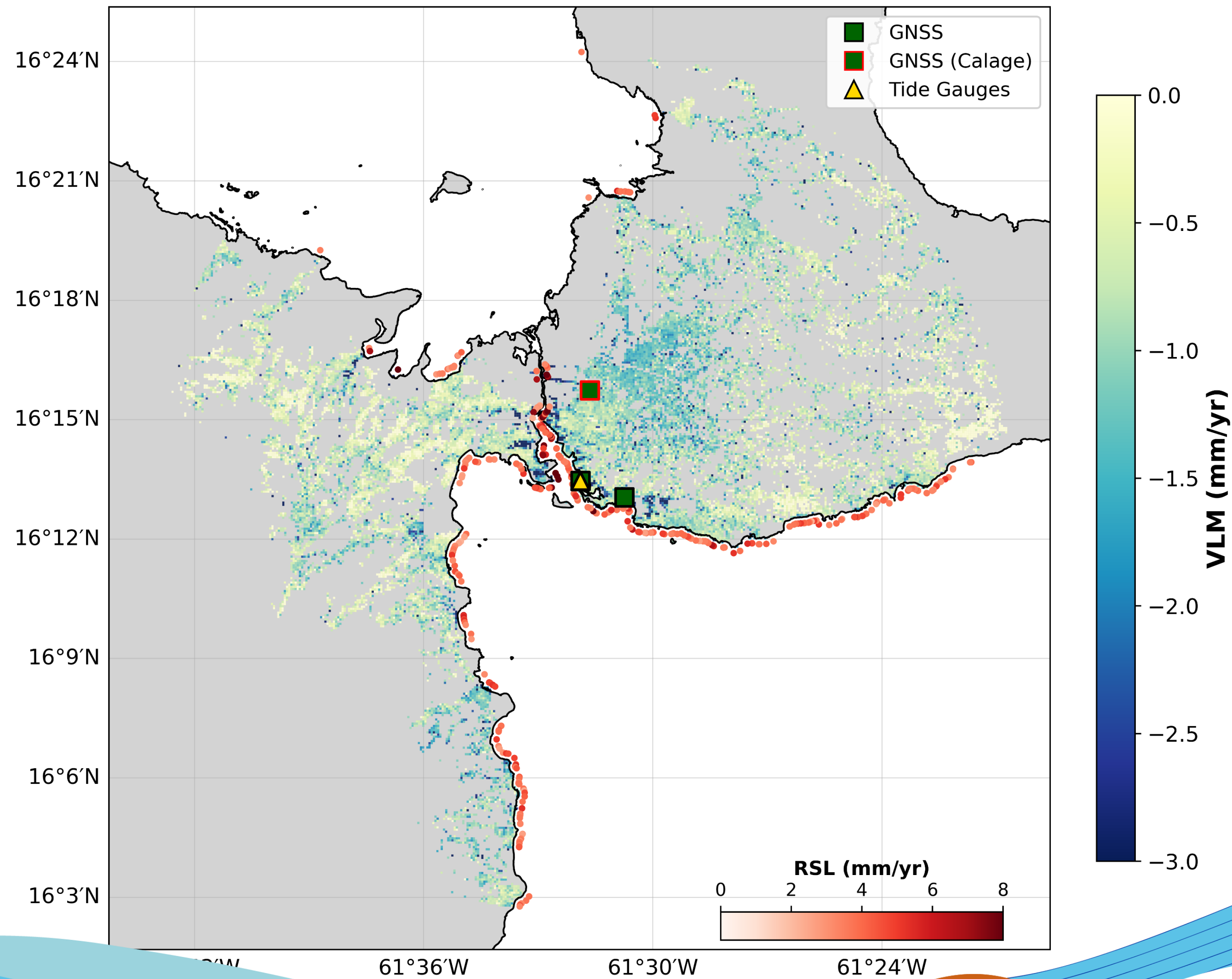
- Extension **mondiale** et **internationale**
- **1319** CGNSS@TG
- **7.5 M** fichiers collectés, analysés et distribués
- **200** fournisseurs de données
- Centre de données **GLOSS** depuis 2011

Pointe-à-pitre Guadeloupe



Les futurs produits SONEI

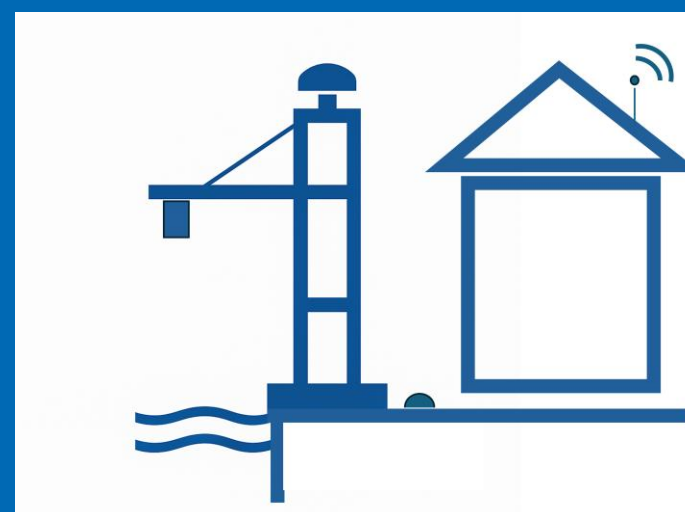






GLOSS Implementation Plan 2026

IOC Executive Council – EC-59
GLOSS Group of Experts
July 2, 2026



Dr. Begoña Pérez Gómez
Puertos del Estado (Spain)
Chair GLOSS GE

Key innovations of the new Implementation Plan

Creation of 3 Working Group : (1) Data Archaeology (2) Sensors & emerging technologies (3) QC & Data Management



New GLOSS Station Definition and Classification

- GCN – GLOSS Core Network (aspirational minimum coverage)
- GRS - GLOSS Reference Stations (highest quality, fully compliant)
- GCS – GLOSS Contributing Stations



Application-based Labels and GLOSS Certification Process

- Climate monitoring (C)
- Hydrography (H)
- Operational oceanography and ocean science (O)
- Early Warning (E)



Harmonized L0-L4 Data Processing Labels

- Distinction between curated and aggregated datasets
- Raw → quality controlled data → sea level products
- Hierarchy of quality levels consistent across all stations and GLOSS data centers



Unified GLOSS Data Portal

- Single entry and distribution point for all data
- Seamless access to PSMSL, VLIZ, SONEL, UHSLC GLOSS portals

GLOSS event 2027

- Réunion du prochain Groupe d'Expert à Paris (mai)
- Suivi d'un workshop sur les nouvelles technologies (La Rochelle)

