



RÉPUBLIQUE  
FRANÇAISE

*Liberté  
Égalité  
Fraternité*



**Cerema**  
CLIMAT & TERRITOIRES DE DEMAIN

# CANDHIS

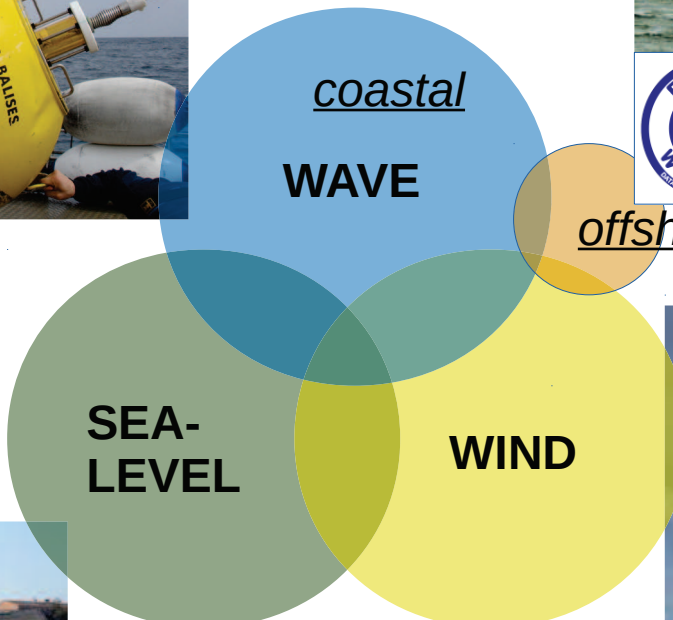
## THE FRENCH NATIONAL COASTAL WAVE OBSERVATORY

*Xavier Kergadallan, Alain Le Berre et Ronan Sanquer  
Marie Guennou (trainee)*

Technical directorate Water, Sea and Rivers  
Cerema

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# French national metocean observatories



CANDHIS  
The french national coastal wave observatory

# CANDHIS The french national coastal wave observatory

- ❑ A coastal network since 1970's
- ❑ A network: Cerema  
+ administrations+ co-owners
- ❑ An information system: Cerema



<p><b>MINISTÈRES TRANSITION ÉCOLOGIQUE COHÉSION DES TERRITOIRES MER</b></p> <p><i>Liberté Égalité Fraternité</i></p>	<p>Direction générale de la prévention des risques (DGPR)</p>	<p>Direction générale des infrastructures, des transports et de la mer (DGITM)</p>
	<p>Direction générale de l'aménagement, du logement et de la nature (DGALN)</p>	<p>Direction générale de l'énergie et du climat (DGEC)</p>
<p>DREAL Occitanie Direction Régionale de l'Environnement, de l'Aménagement et du Logement et Occitanie</p>	<p>DGTM GUYANE</p>	<p>Direction Interrégionale de la Mer Méditerranée</p>
<p>Direction Inter-régionale de la Mer - Manche Est - Mer du Nord</p>	<p>Direction Interrégionale de la Mer Nord Atlantique Manche Ouest</p>	<p>Direction Interrégionale de la mer Sud-Atlantique</p>



# CANDHIS

## The french national coastal wave observatory

❑ Real time data : 35 waveriders buoys



# CANDHIS

## The french national coastal wave observatory

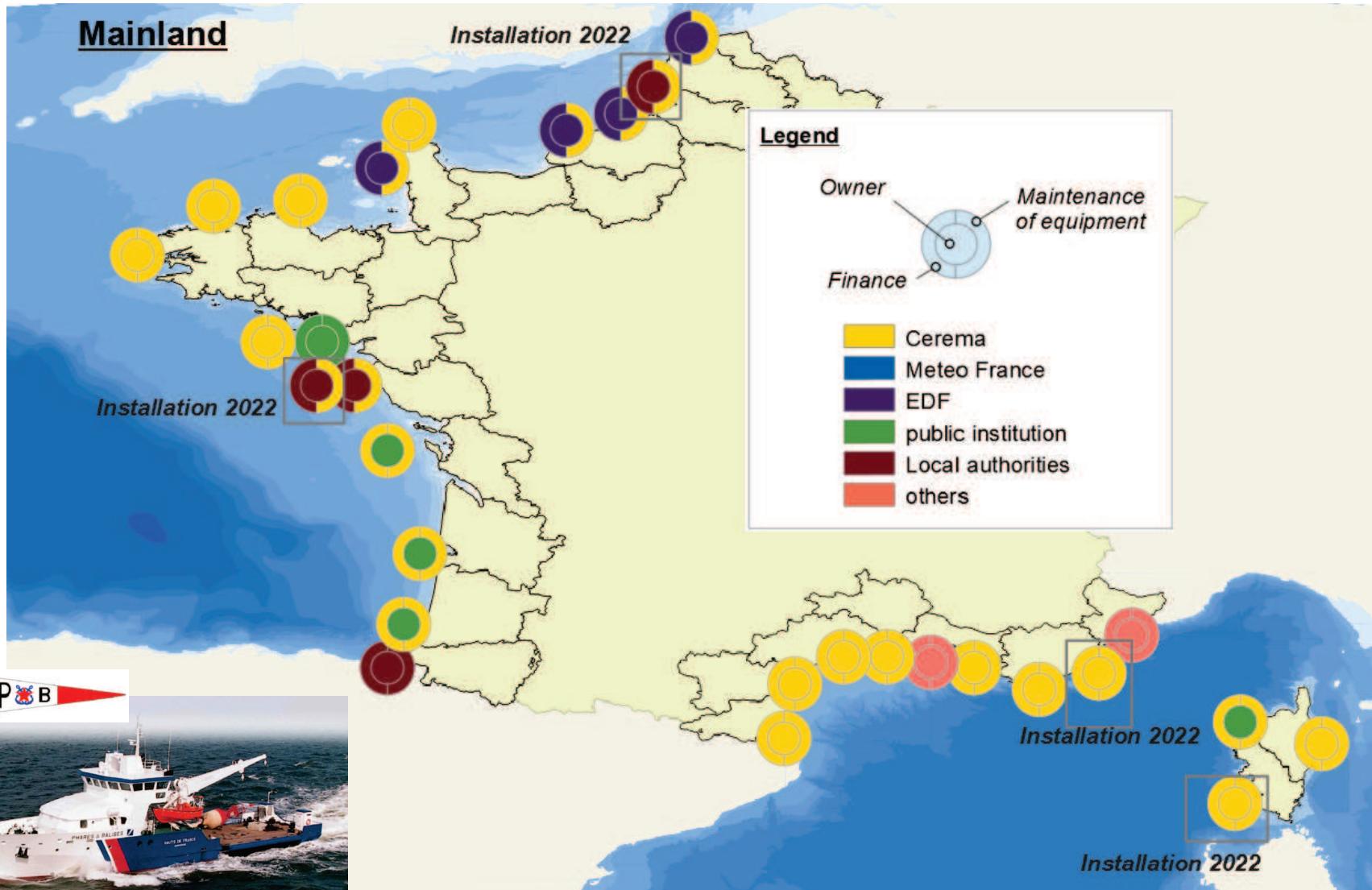
❑ *Stored data : since 1985, until 20 years of cumulated data*



# CANDHIS

## The french national coastal wave observatory

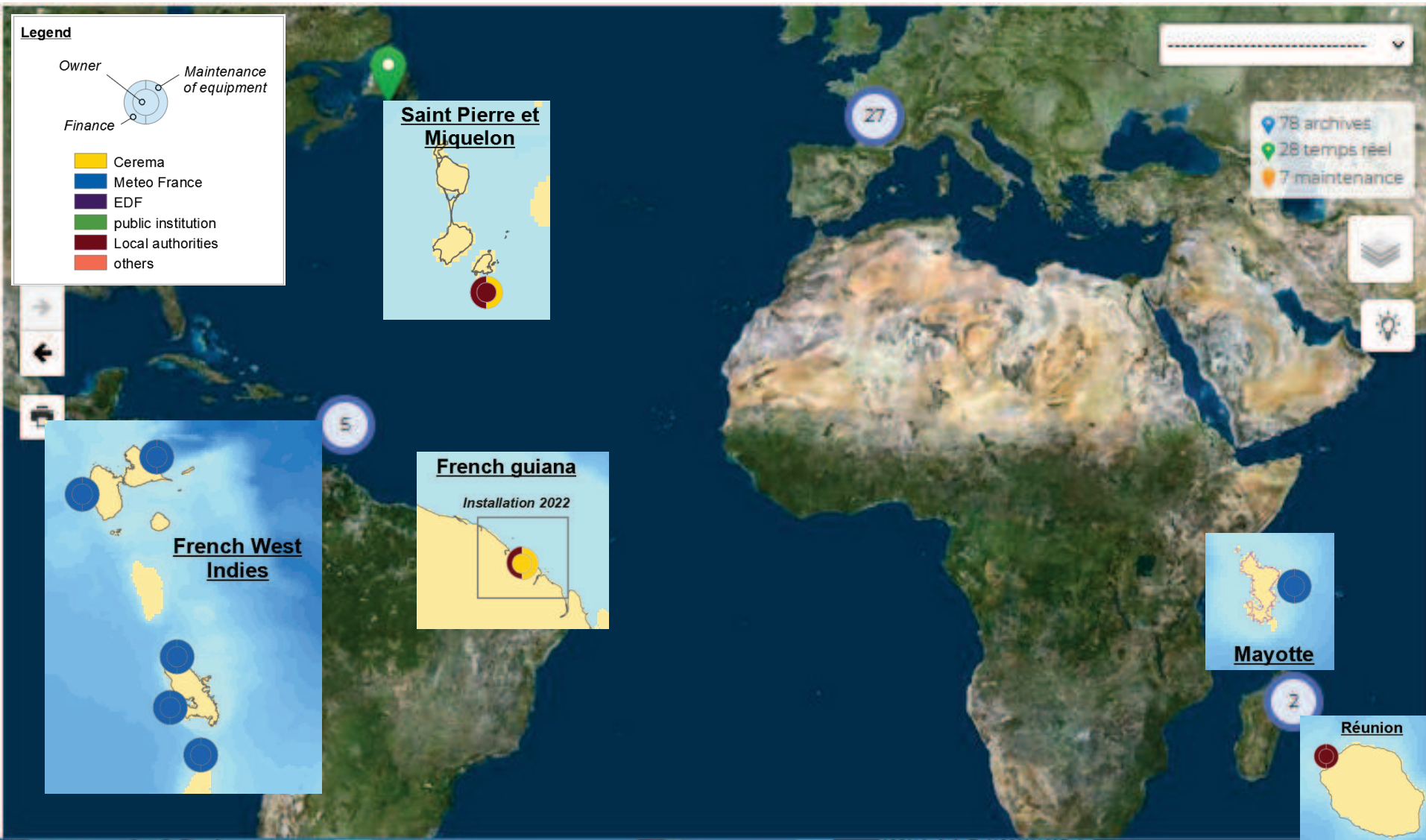
### □ Coverage and management



# CANDHIS

## The french national coastal wave observatory

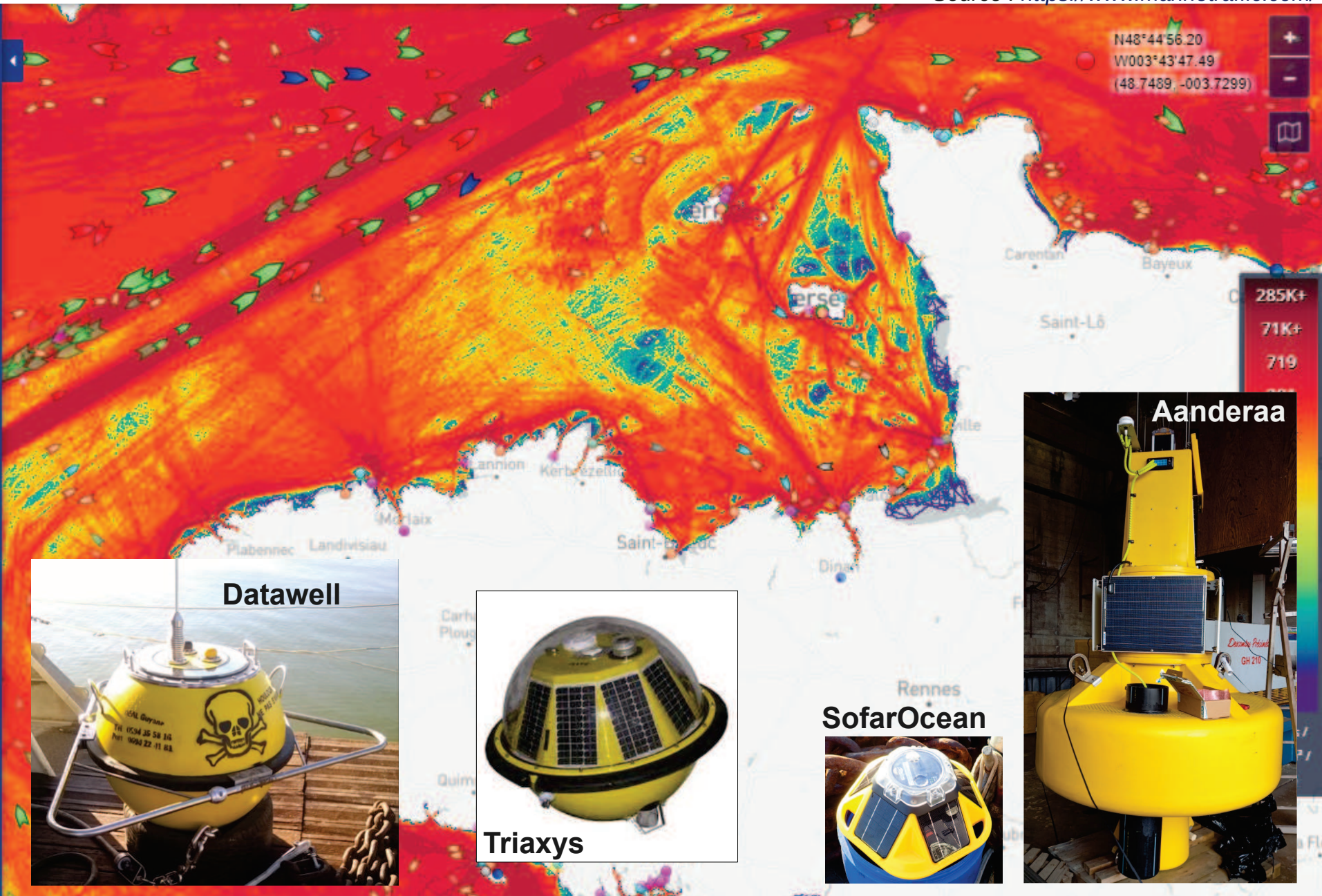
### ❑ Coverage and management



# CANDHIS

## waveriders

Source : <https://www.marinetraffic.com/>



**Datawell**



**Triaxys**

**SofarOcean**



**Aanderaa**



# CANDHIS Information system

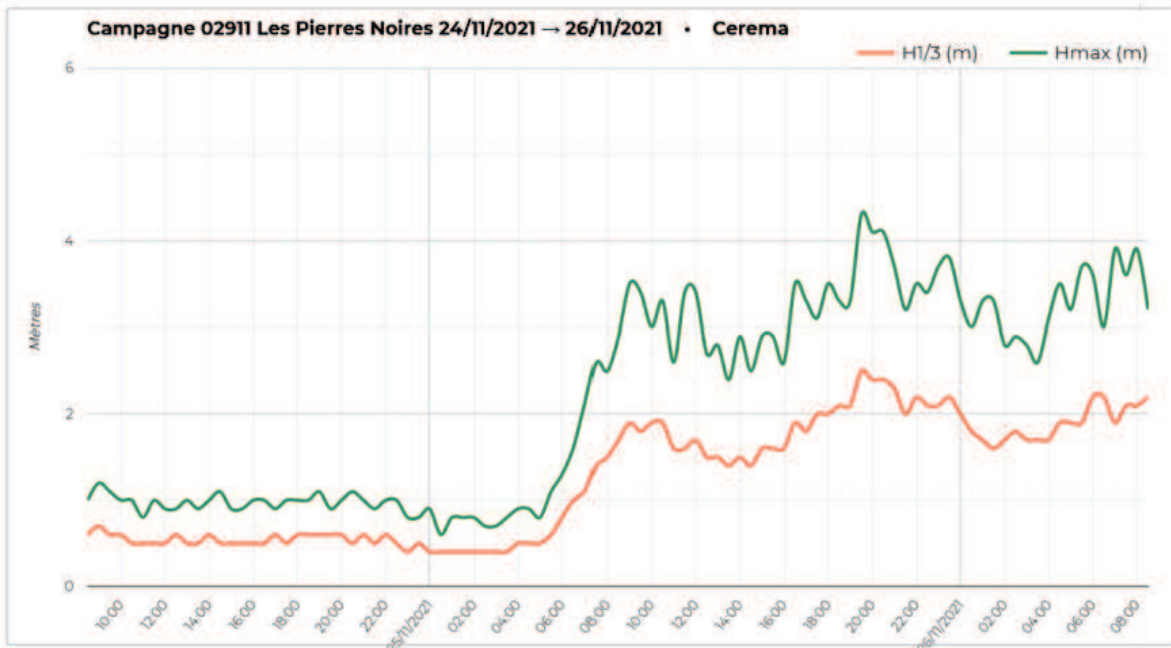
<https://candhis.cerema.fr/>

Logo of République Française and Cerema (Centre d'Archivage National de Données de Houle In-Situ). Navigation buttons: Accueil, Carte, Campagne.

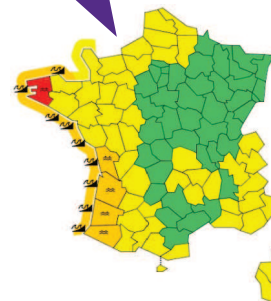
Navigation menu: Campagne, Temps réel, Caractéristiques, Archives, Temps réel, Archives, Analyse.

Campagne 02911 Les Pierres Noires

Données temps réel



real time stored data



national monitoring system



# CANDHIS

## Wave data analysis



17/02/2021

# CANDHIS

## Wave data analysis



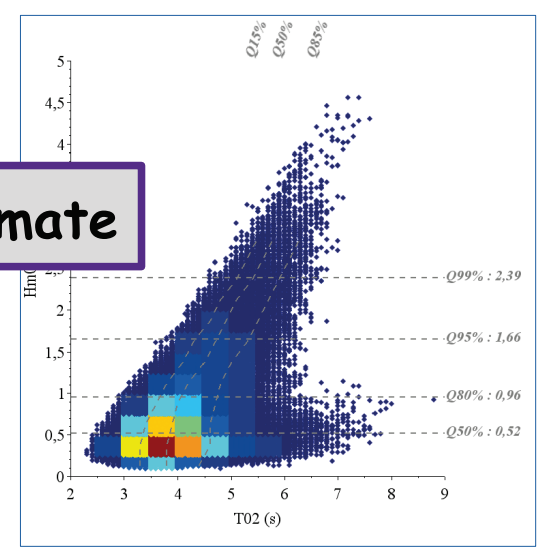
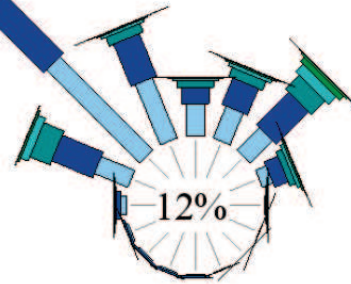
Fiches synthétiques de mesure des états de mer  
du réseau CANDHIS

Tome 1 - Mer du Nord, Manche et Atlantique - Janvier 2021

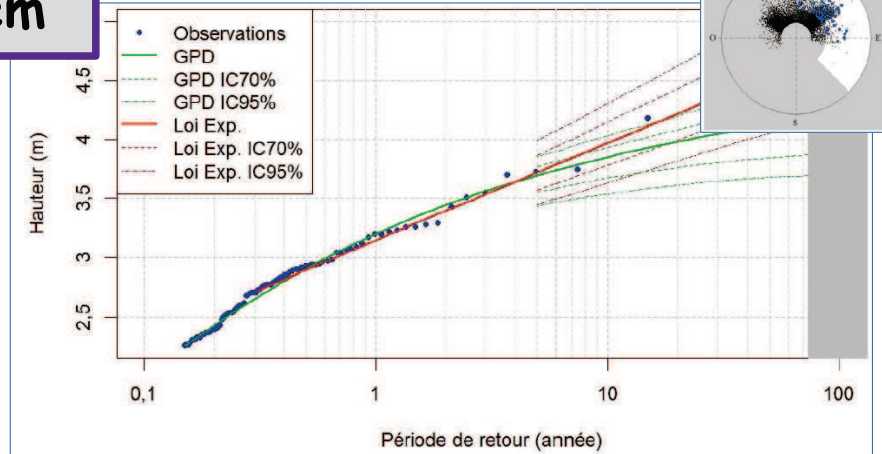


Nord  
↑

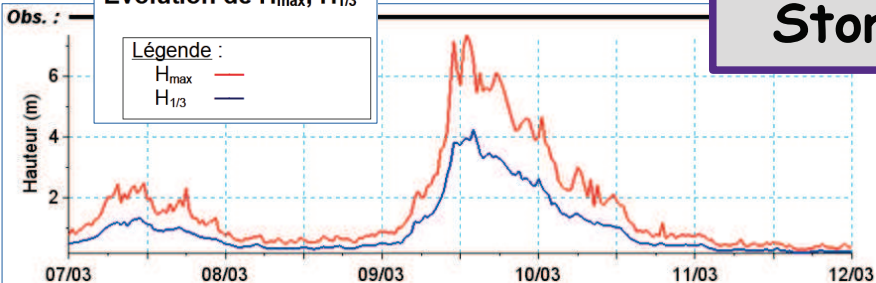
Wave climate



Extrem

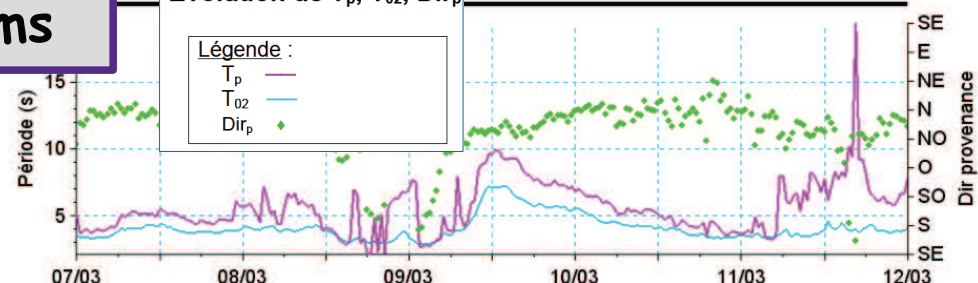


Évolution de  $H_{max}$ ,  $H_{1/3}$



Storms

Évolution de  $T_p$ ,  $T_{02}$ ,  $Dir_p$



# CANDHIS Discussion

- ❑ **Spatial coverage:** density
- ❑ **Equipments:** comparaison, certification
- ❑ **Data control:** for data dissemination and remote equipment control
- ❑ **Data analysis:** list of sea state parameters (wave system decomposition), wave climate, extrem analysis, climate change
- ❑ **End-users:** what do you need ?





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**Thank you for your attention**

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