

40 years of moored buoys in Portugal



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Portugal - Real-time networks





Portuguese Moored buoys network

16 Moored Buovs

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Costal network – Datawell buoys

In **1980** the Portuguese Hydrographic Office (IH) and several national entities, started a program for measuring waves.

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Supported by NATO, through the program "Science for Stability".





NATO - North Atlantic Treaty Organization

Wave Data since 1980

- Technology evolution;
- Data quality;

Sensors: wavesense and SST; Depth: ~100m Data transmission: VHF to land and internet - every 30 min. Maintenance – 1 per year;



Met-ocean buoy network

In 2009, with EEAGrants and Interreg Europe financial supports, IH started to implement the meteo-oceanographic buoy network

Wavescan Sensors:

- wave sense
- Meteo sensors
- sea temperature
- currents (ADCP)





Depth: from 80m to 2000m Maintenance – 2 per year Hourly data transmission -IRIDIUM



Real-Time Data



Who are our users?



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Extreme weather

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Support Decision

Storm Félix – March 2018



Maximum Wave Height : 17.62m





7°W 6°W 5°W 11°W 8°W



Climate Change



1980 1985 1990 1995 2000 2005 2010 2015 2020

44°N



1980 1985 1990 1995 2000 2005 2010 2015 2020



Boia Faro costeira - médias mensais

40 years of wave data

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mm/year



Challenges and Future

Challenges

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- Ship time
- Vandalism
- Specialized human resources
- Long-term sustainability



Future:

For the success of a long-term measurement network is important to have:

- National government commitment;
- Integrated into a regional or global network;

