SeCosta

Divulgació Científica

The SECOSTA Project. Citizen science to monitor beach topography with low cost instruments

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INSTITUTO ESPAÑOL DE OCEANOGRAFÍA 1914

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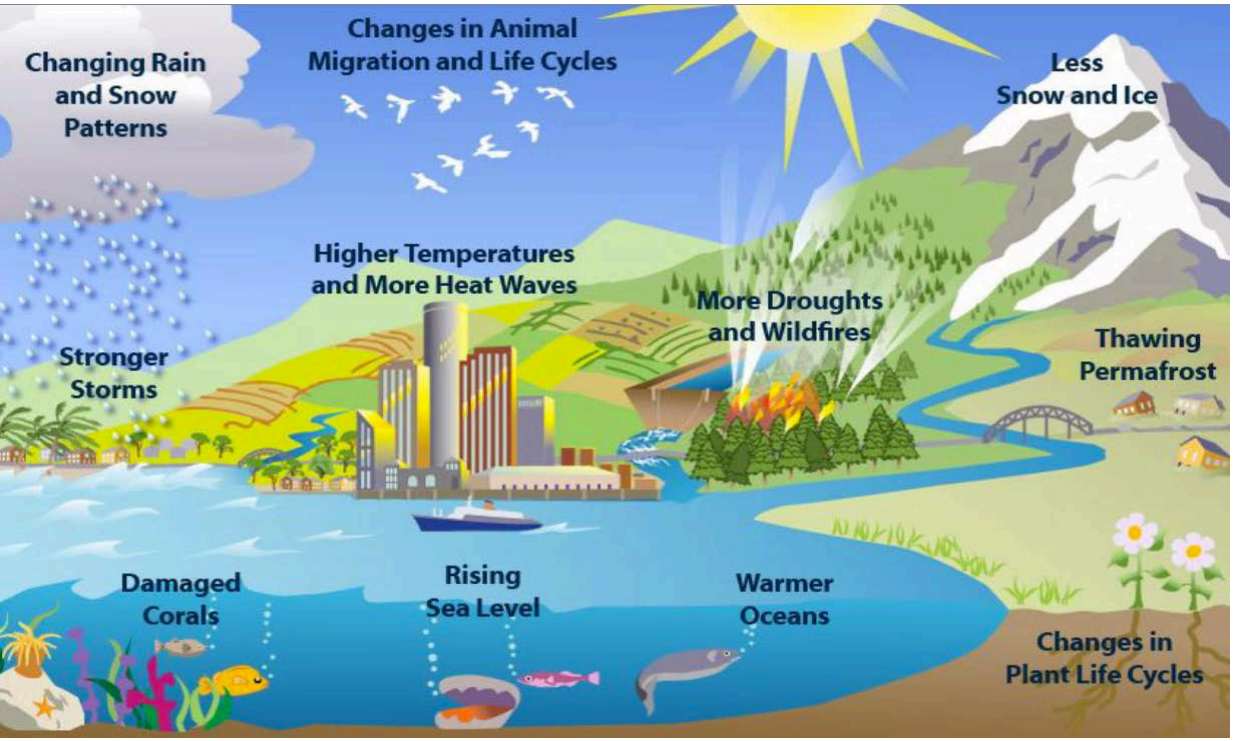
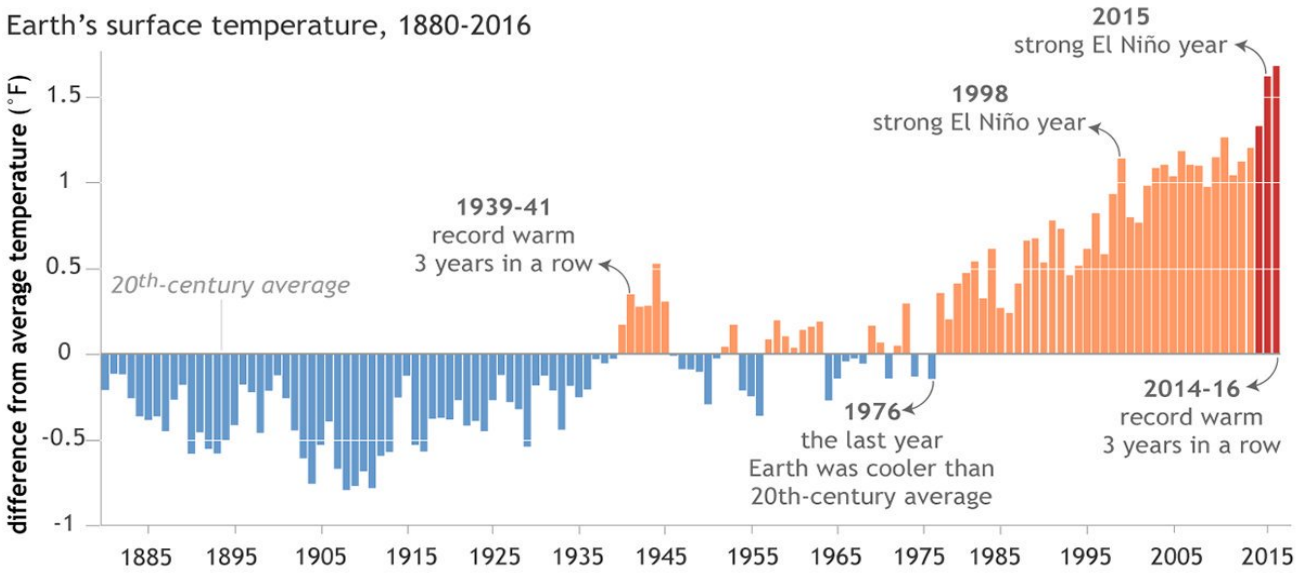
SOCLIMPACT

Climate change and global warming



Global warming induced by human activities is a fact and its consequences are starting to be noticed



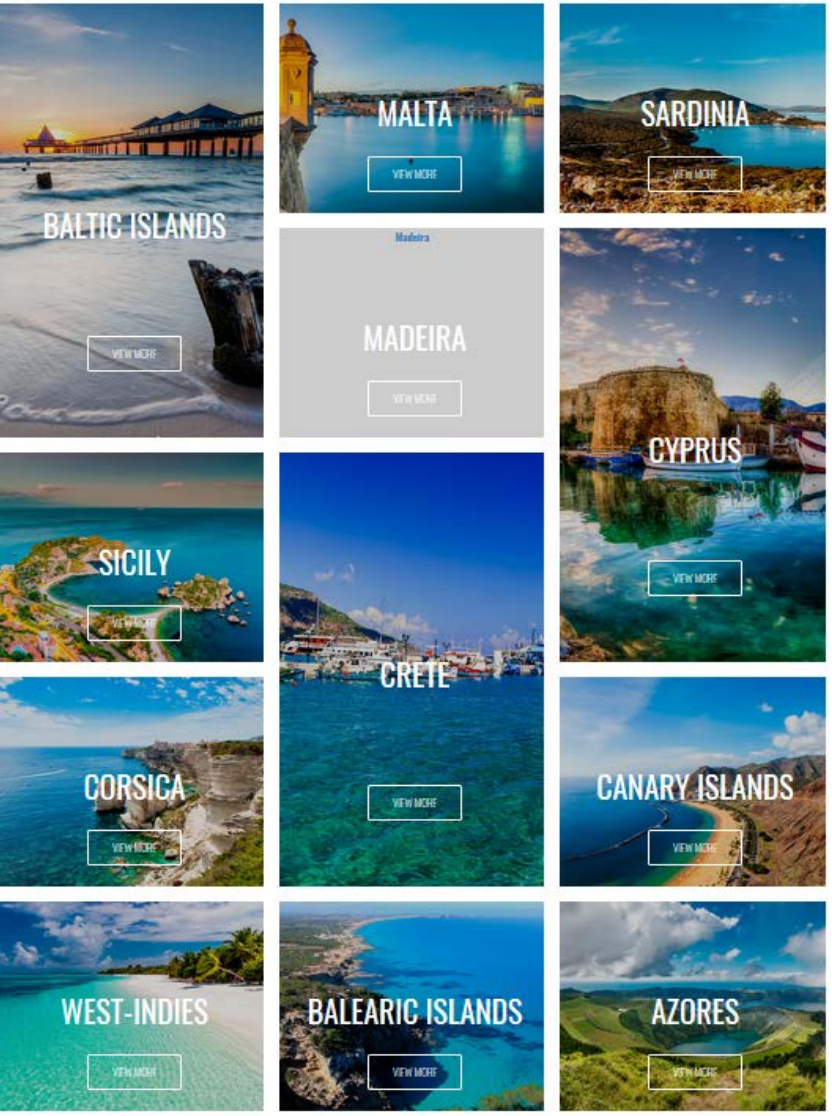
Climate change in the European Islands

How these impacts are translated to the European islands is the main motivation of **the European project SOCLIMPACT**

http://soclimpact.org

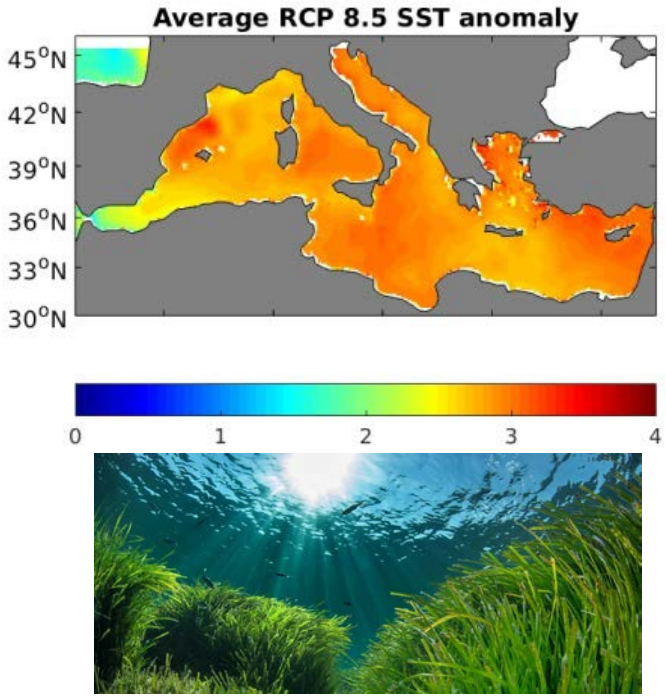
Climate change in the European Islands

The goal of SOCLIMPACT is to assess the **environmental and socioeconomic impacts** of climate change in European Islands and to propose **adaptation strategies**.



Climate change in the European Islands

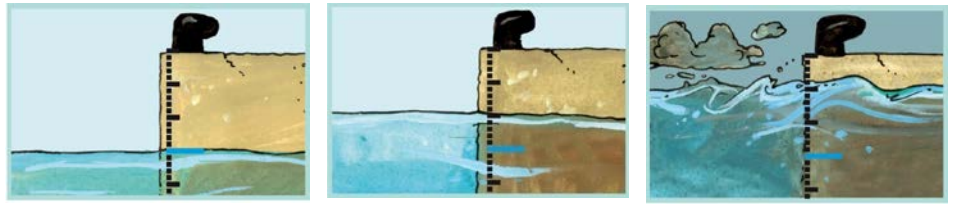
In this context ... what do we expect for the Mediterranean Sea?



A temperature increase of seawater of up to 3-4ºC which will have a pround impact on marine ecosystems (e.g. Posidonia).

A slight decrease of wind waves for the mean and extreme states

A rise of the sea level between 40 and 80 cm, which will be enough to amplify to dangerous levels the impact of marine storms and to reduce the beach areas.



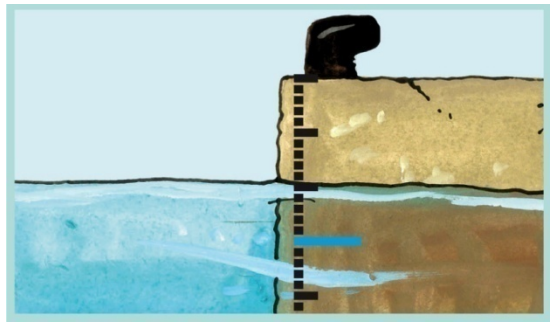
The SOCLIMPACT project

SOCLIMPACT

In SOCLIMPACT our task is to analyze the projected evolution of sandy beaches in the Mediterranean, using the Balearic Islands as a case study.

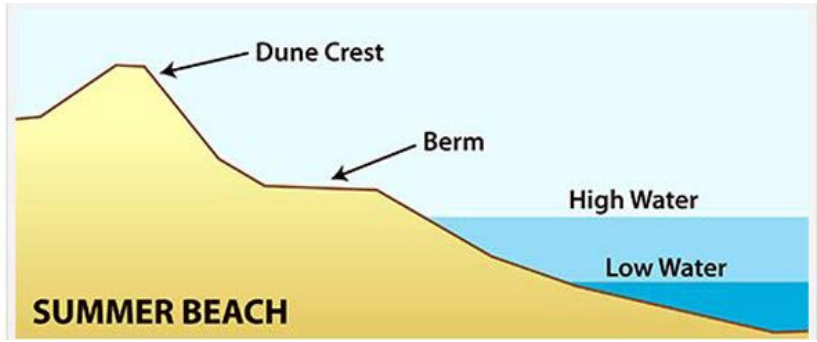
To do this information is needed about sea level and waves evolution as well as detailed characterization of the beach topographies.

Sea Level



Waves

Beach topographies



The SOCLIMPACT project

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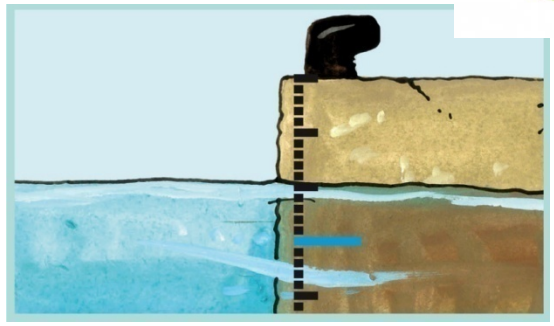
In SOCLIMPACT our task is to analyze the projected evolution of sandy beaches in the Mediterranean, using the Balearic Islands as a case study.

To do this information is needed about sea level and waves evolution as well as detailed characterization of the beach topographies.

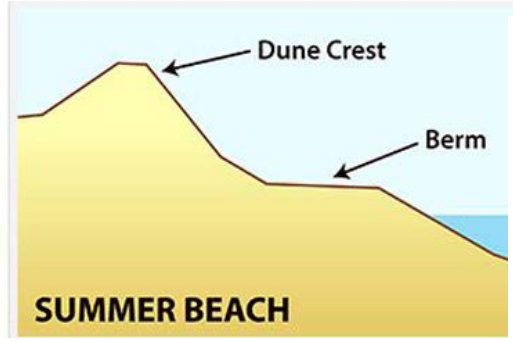
The information on the latter is scarce, so we need help!

Sea Level



Waves

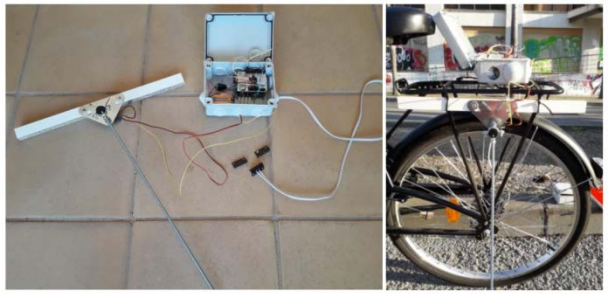
Beach topographies



The SECOSTA initiative

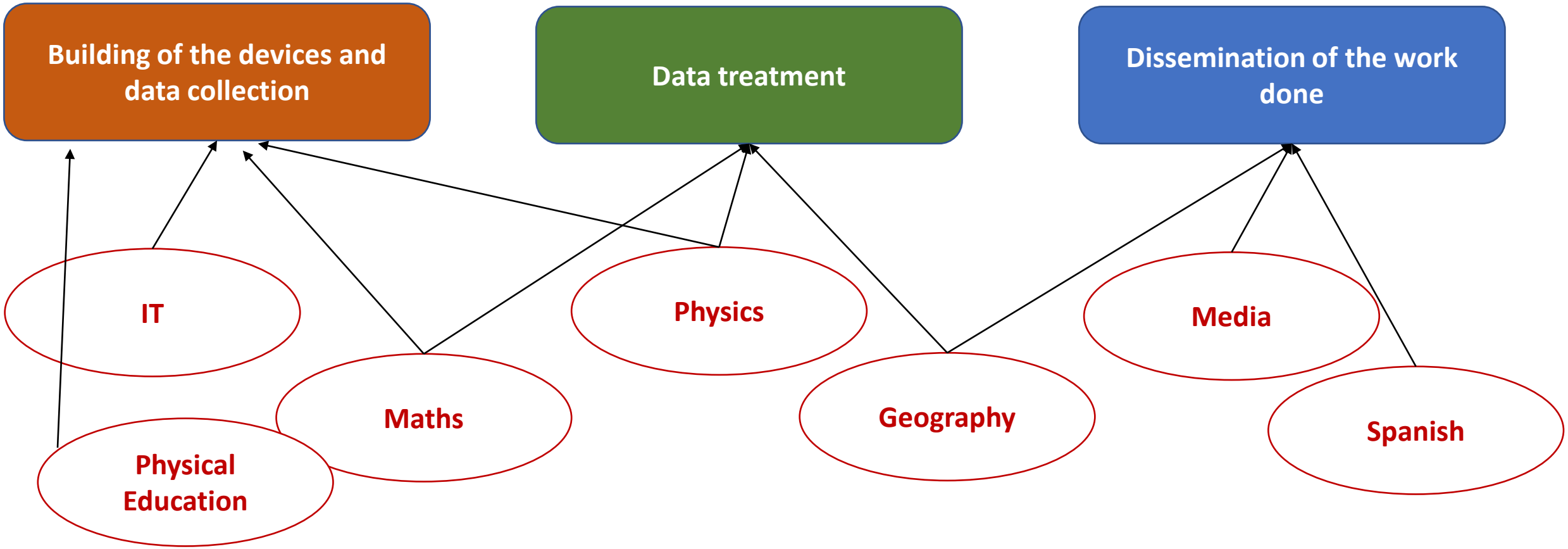
Our proposal: Citizen science to monitor beach evolution

To design low-cost instruments → To teach the IT teachers to build the instruments with their students → Students get observations as part of their curriculum → We incorporate their results in our scientific studies.



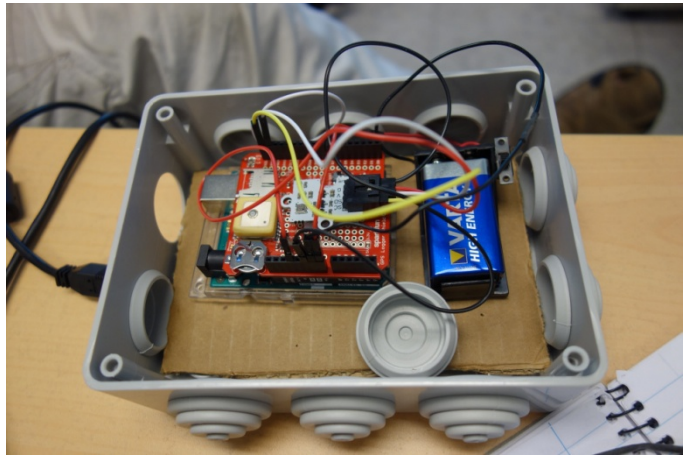
The proposal from the point of view of the schools:

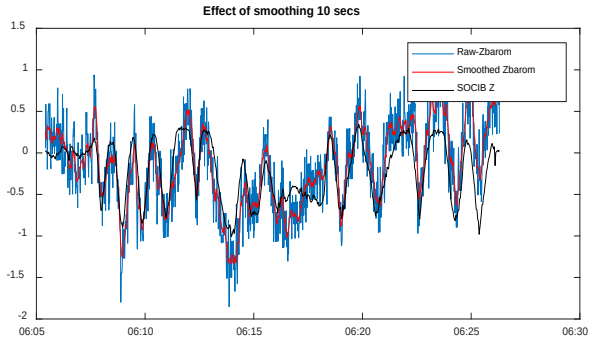
They incorporate the project as part of their programme adapting it to their reality and needs

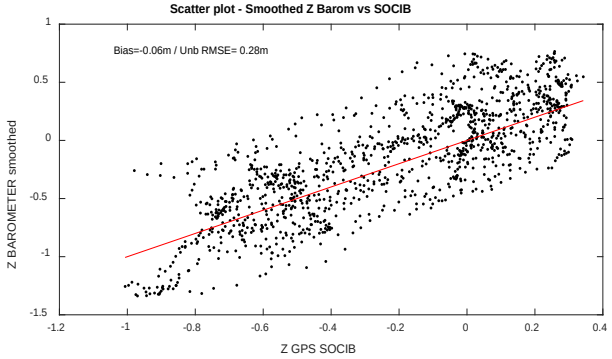


The SECOSTA initiative

The devices are very simple and based on Arduino technology, familiar for most IT teachers.







The SECOSTA initiative

In 2018-2019 and 2019-2020

20 and **24** secondary schools have participated, respectively.

4000 students involved in the project.

We have organized **6 training workshops** for teachers

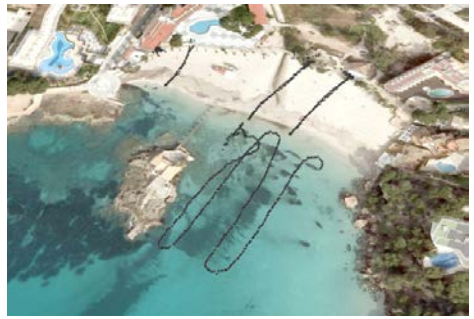
We have done ~**80 talks at the schools** to inform the students about climate change and the project

The SECOSTA initiative

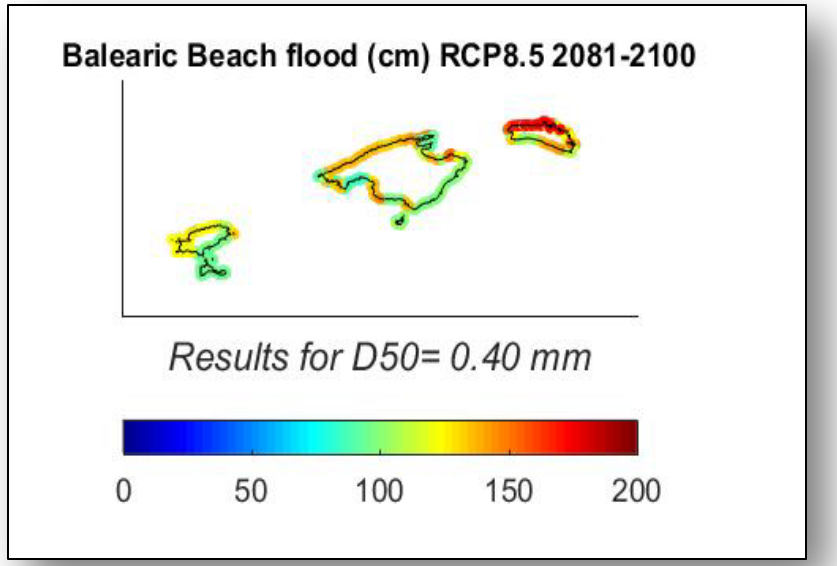
The 2018-2019 data have been already processed.
Up to now we have data from 30-40 beaches, far more complete of what is available in most European islands

Beaches sampled in2018-2019

Example of data collected in one campaign



Final results integrating the collected data with sea level and wave projections



The SECOSTA initiative

The project has received lots of attention by the local media with special programs devoted to it and recurrent apparition in the news.

This also adds extra motivation to the students tasks!

https://secosta.wordpress.com/

arabalears

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