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EDITO European Digital Twin Ocean
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European Digital Twin Ocean

Early warning system for meteotsunamis in the western Mediterranean

SOCIB Balearic Islands Coastal Observing and Forecasting System

MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES · CSIC · Govern de les Illes Balears

© Anais Dyckmans (Seascape Belgium)

Digital Twin of the Ocean prototypes in the Balearic Sea

1 Meteotsunami Early Warning System

Prediction of extreme sea level fluctuations in Ciutadella Harbour

2 Marine Protected Areas Monitoring

Monitoring climate change impact in Cabrera National Park

3 Climate Change Adaptation Planning

'What-ifs' scenarios of coastal flooding and erosion

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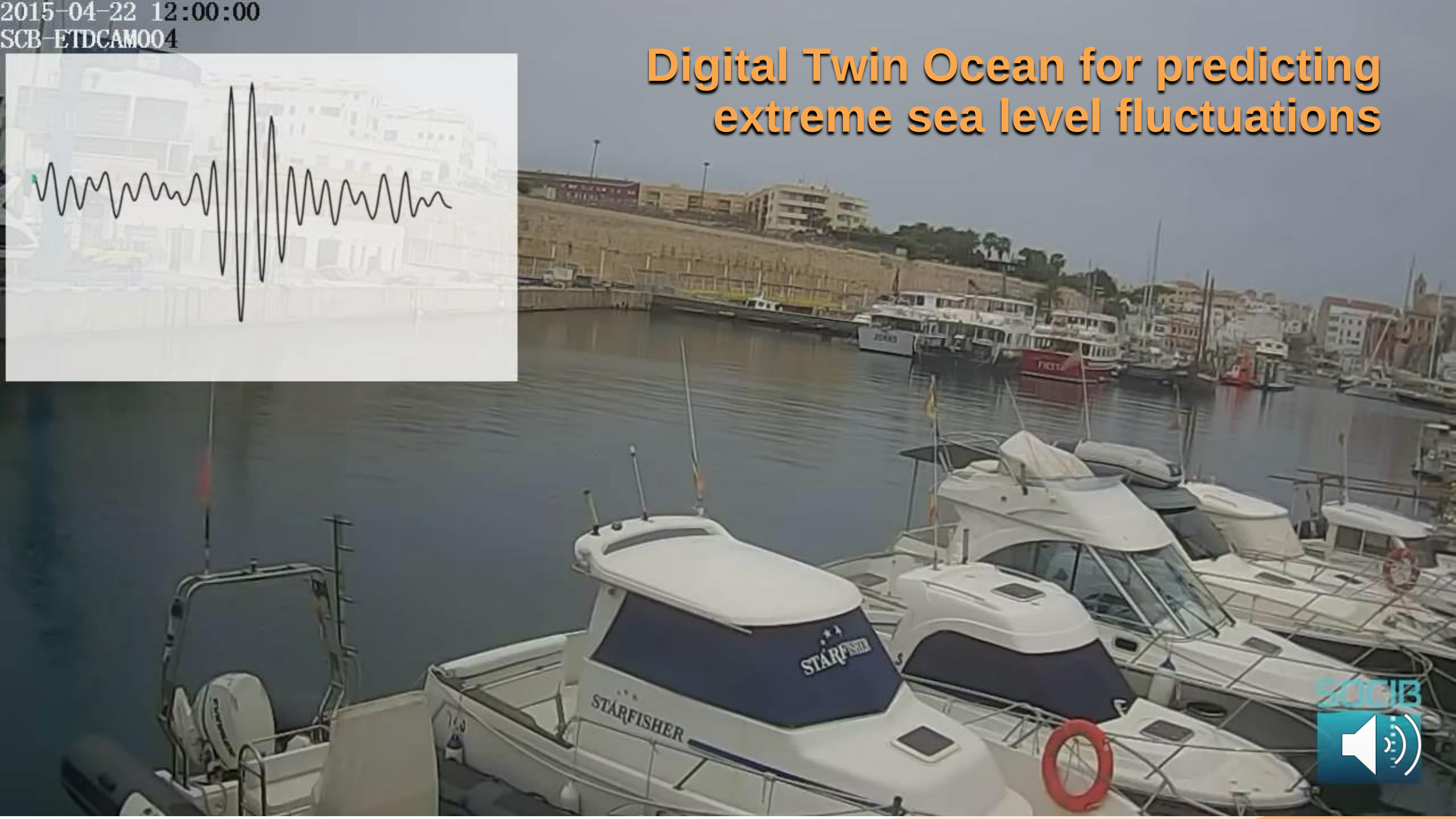
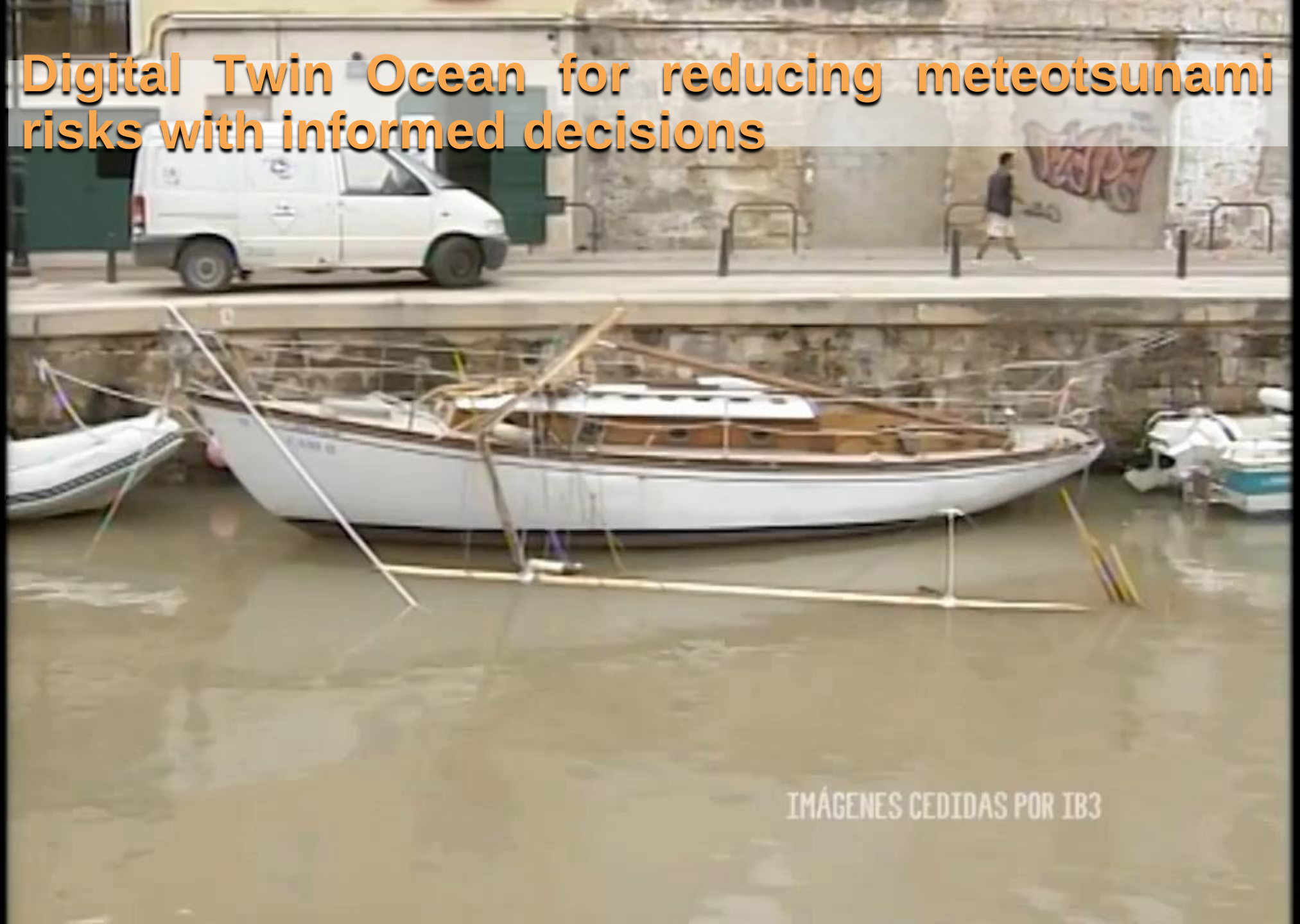
Ministerio de Ciencia, Innovación y Universidades | CSIC | Govern de les Illes Balears


2015-04-22 12:00:00
SCB-ETDCAM004
Digital Twin Ocean for predicting extreme sea level fluctuations
STARFISHER
SOCIB

Digital Twin Ocean for reducing meteotsunami risks with informed decisions



Open data: key to Digital Twin Ocean success

Barometers

Tide gauges

High-resolution ocean models

Mesoscale NWP system

Global Atmospheric Forecast Systems

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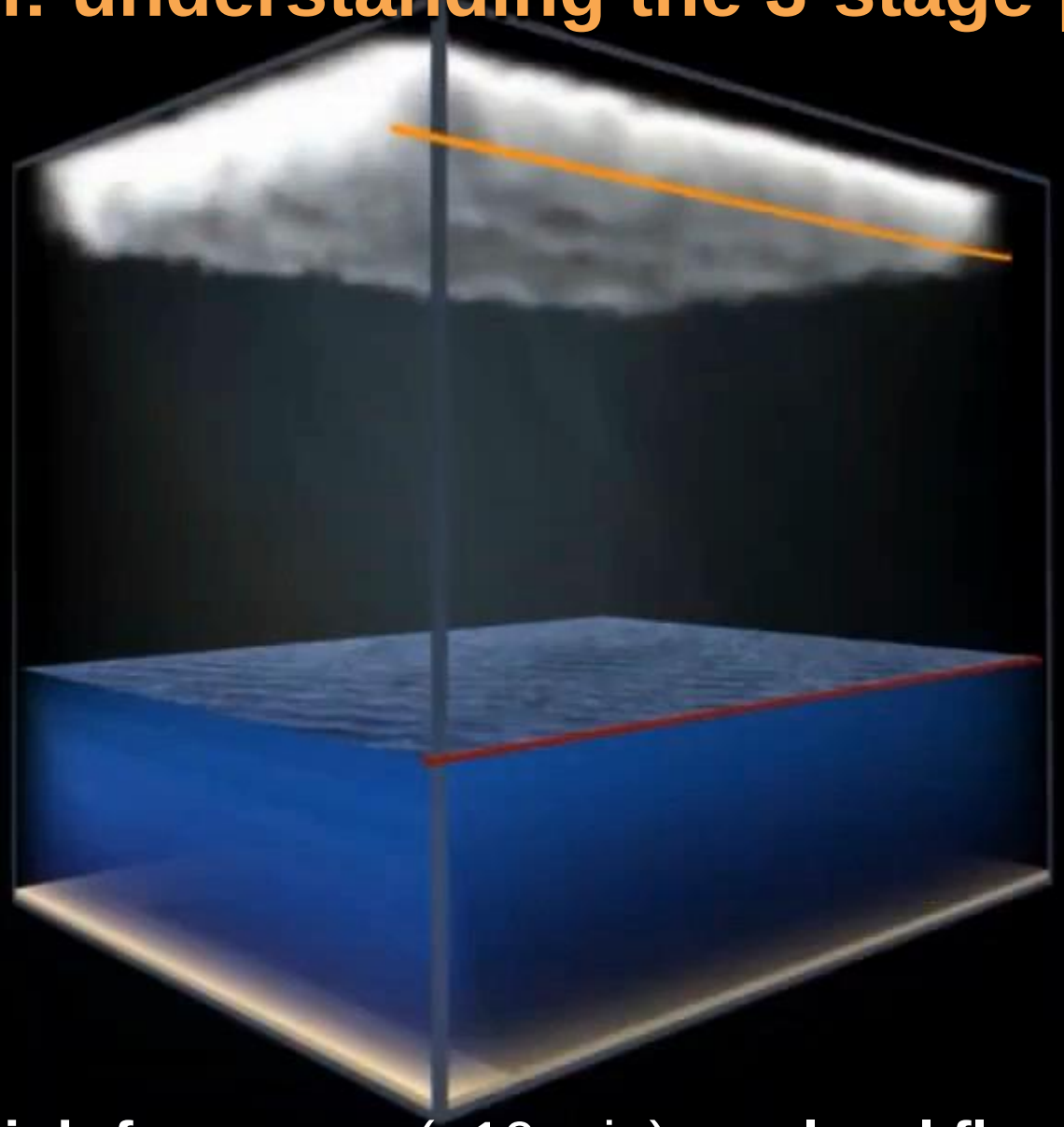
& complementary databases

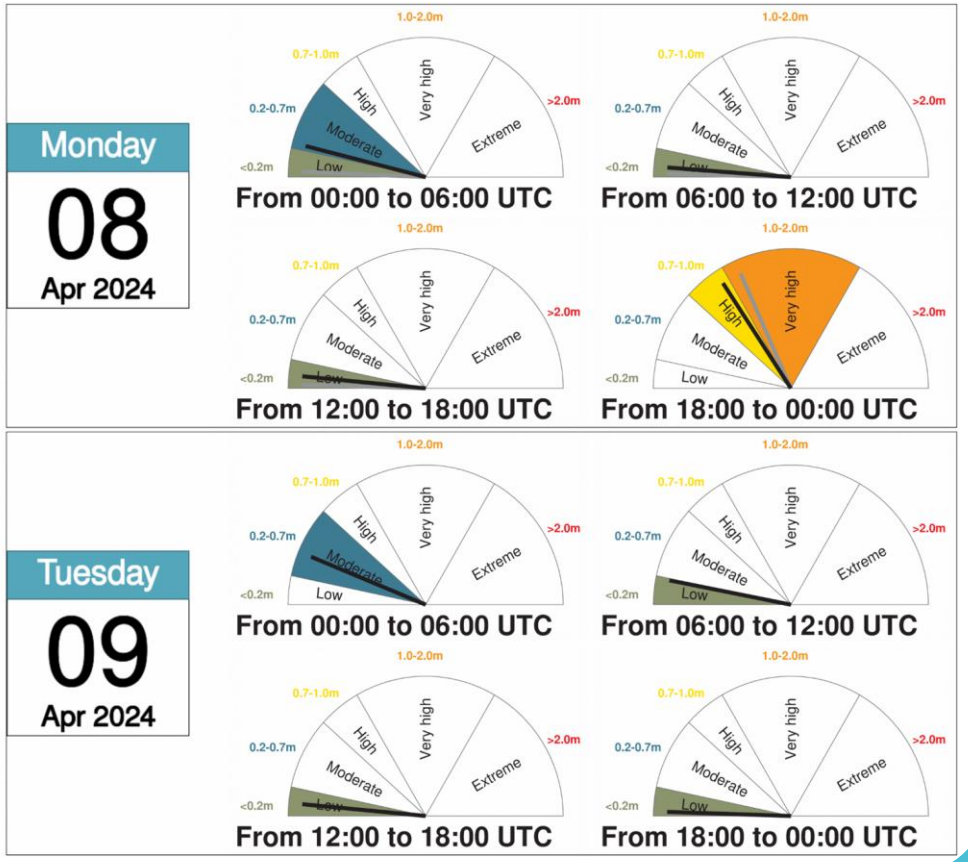
Meteotsunami: understanding the 3-stage play



Large (up to 4m) and **high-frequency** (~10 min) **sea level fluctuations**, generated by atmospheric pressure disturbances

Meteotsunami Early Warning System prototype

Meteotsunami **warning levels**



Sea level anomaly at Ciutadella and Menorca channel (08/04/24), largest event since 2019.

(Renault et al., 2011; Ličer et al., 2017; Mourre et al., 2021)

European Digital Twin Ocean user benefits

Extreme hazards and safety

Strengthen PortsIB's meteotsunami preparation

Climate and adaptation

Empower coastal sustainability planning

Science and innovation

Advance meteotsunami knowledge

Thank you very much for your attention

Acknowledgements