



SO-CHIC: South Ocean Carbon and Heat Impact on Climate

Meeting Name

Presenter name(s) & Organisation(s)



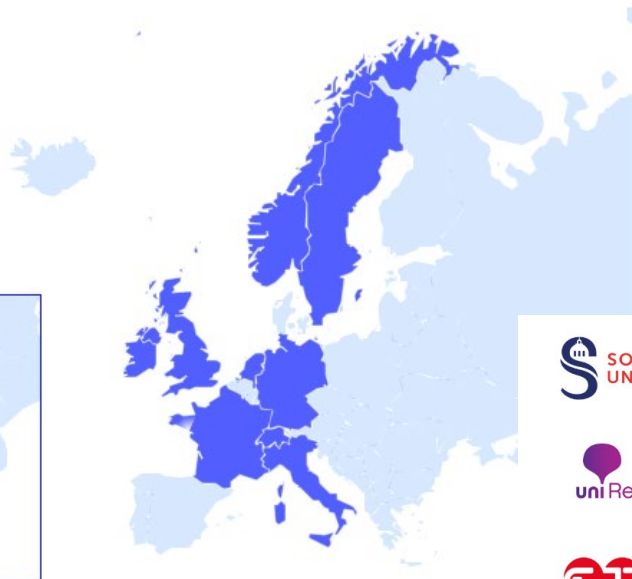
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°821001.



General information

H2020 Research & Innovation Action European Commission Societal challenge 5 on « Climate Actions »

15 partners from 10 different countries
Coordinator: JB Sallée at Sorbonne Université



| Start | | End | Maximum EC contribution | EU reimbursement rate |
|------------|-----------|------------|-------------------------|-----------------------|
| 01/11/2019 | 48 months | 31/10/2013 | € 7,989,925 | 100% |



Objective

To understand and quantify variability of heat and carbon budgets in the Southern Ocean

Huge climate regulation role poorly understood and represented in climate models





Specific objectives

O1:

To initiate a sustained monitoring of budgets of heat and carbon in the Southern Ocean, by quantifying their fluxes at the air-sea-ice interface and estimating interannual variability of heat and carbon storage in the Southern Ocean.

O2:

To improve understanding of the spatial distribution and variability of heat and carbon exchanges between the atmosphere and the deep ocean, focusing on the dynamics of the ocean mixed-layer, its relation to sea ice distribution, and on assessing what has caused the opening of the open-ocean Weddell Polynya in 2016 and 2017 (i.e. a large-scale ice-free area within closed sea-ice cover), more than 40 years after its previous occurrence.



Specific objectives

03:

To improve understanding of the formation and export of bottom waters in the Bottom Boundary Layer, which ventilate the world's abyssal oceans, and to propose new strategies to represent such key processes, which are major shortcomings of current state of the art climate models.

04:

To identify critical sensitivities in the Southern Ocean climate system that must be correctly represented in models in order to significantly reduce uncertainties in future projections of oceanic heat and carbon content.

05:

To enable free and open access to all data and to maximise impact on the climate report (IPCC), climate services, and climate-model groups.

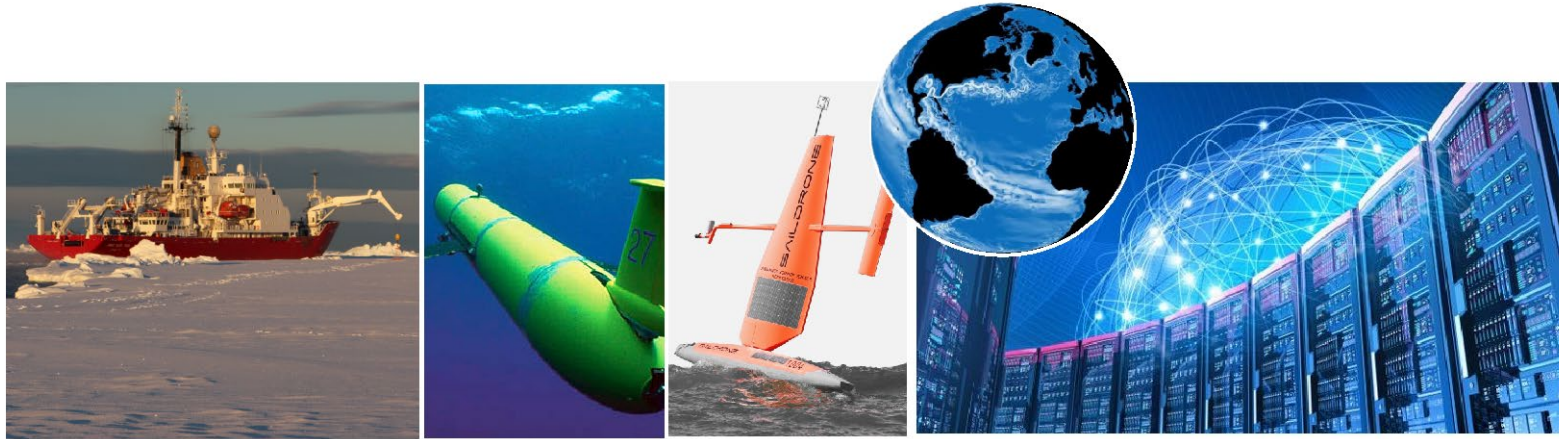


Observation

Targeted innovative experiment
&
Long term monitoring

Numerical Model

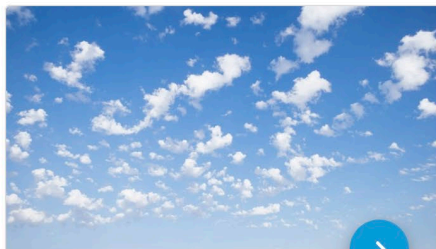
Very high resolution process-orientated
&
Earth System Model



Study key processes & the climate actions



Project architecture



WP1

Air-sea fluxes



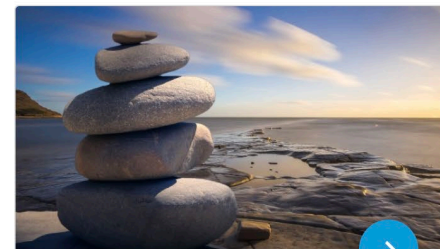
WP2

Upper ocean ventilation pathways



WP3

Bottom ocean ventilation pathways



WP4

Abrupt large polynya events
shortcutting conventional pathways



WP5

Impact on the coupled climate system



WP6

Variability and trends of heat and
carbon uptake and storage



WP7

Data management and connection with
climate services

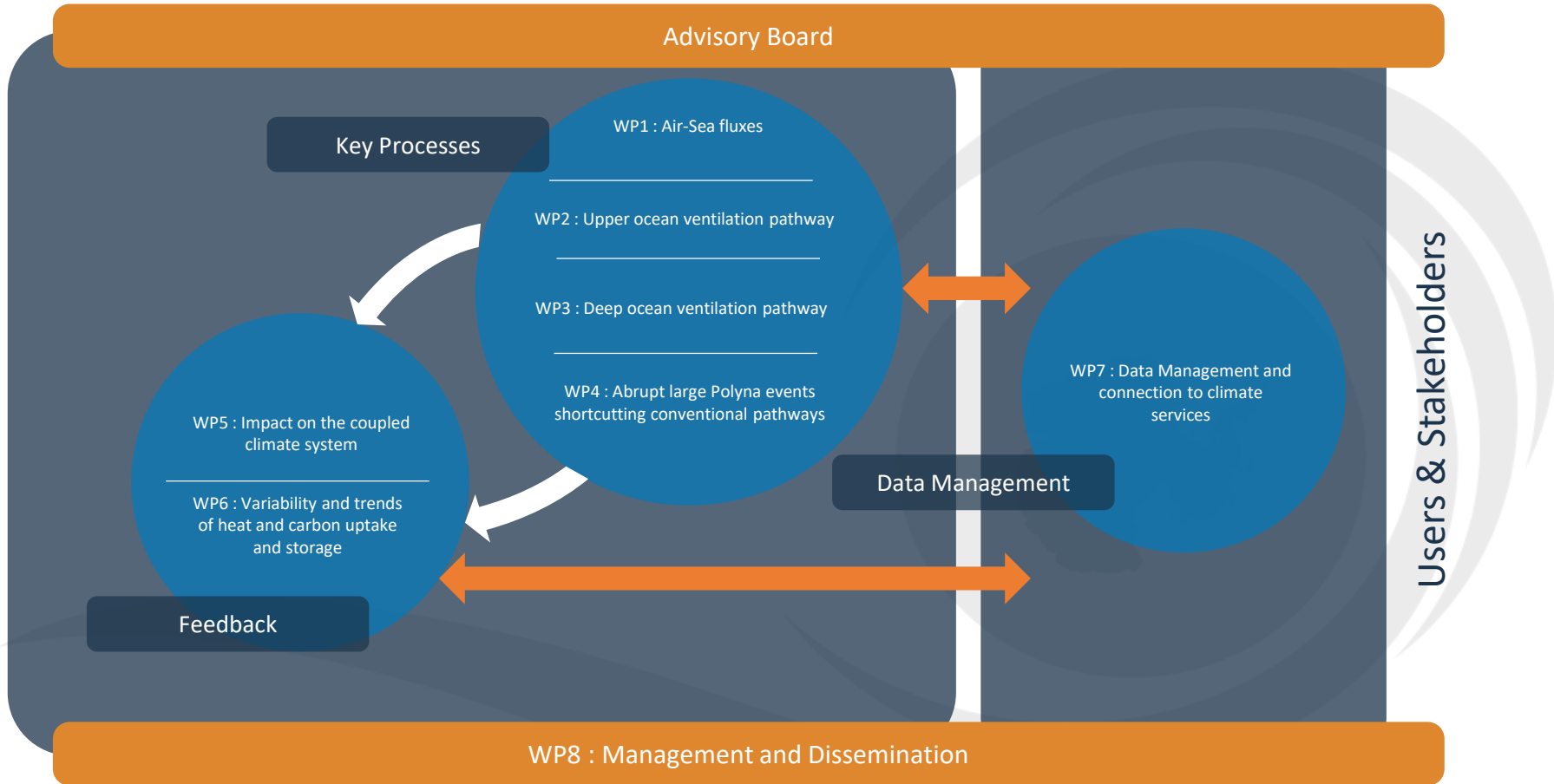


WP8

Project management and
dissemination



The SO-CHIC Project





THANK YOU

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