



# OCEAN:ICE

## OCEAN-CRYOSPHERE EXCHANGES IN ANTARCTICA: IMPACTS ON CLIMATE AND THE EARTH SYSTEM



EU Polar Cluster Community Meeting  
18<sup>th</sup> February 2023



DMI (COORDINATOR), BAS (UK GRANT COORDINATOR), EPB, CNRS, AWI, NORCE, PIK, ETT, U.UTRECHT, U.READING,  
U.NORTHUMBRIA, U.BRISTOL, U.SOUTHAMPTON, U.BRUSSELS, U.GOTHENBURG, ENS-LMD & NPI

A 4 year (Nov 22) Horizon Europe project involving 17 centres,  
~€8 M funding (inc. UKRI co-funding)



## Main Contacts

**Ruth Mottram** - Project Coordinator

**Andrew Meijers** - UK-grant coordinator and PI

**Chiara Bearzotti** - EU grant project manager

**Sarah Coombs** - Head of Operations and WP9 lead

**OCEAN:ICE will assess the impacts of key Antarctic Ice Sheet and Southern Ocean processes on Planet Earth, via their influence on sea level rise, deep water formation, ocean circulation and climate.**

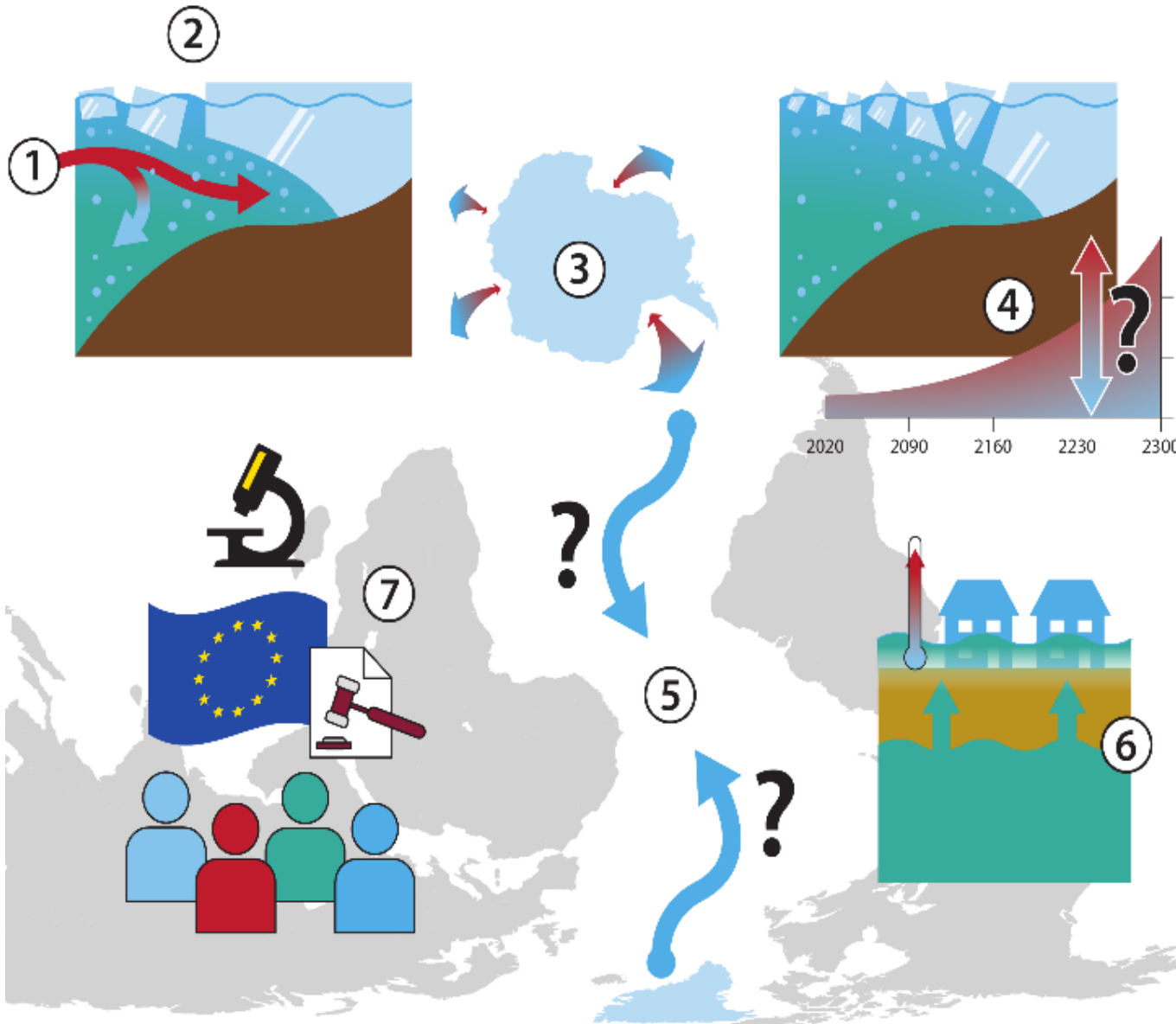
# Objectives



- **O1:** Reduce the spatial and knowledge gaps in ocean observations around Antarctica.
- **O2:** Improve critical ice sheet-ocean processes in numerical models.
- **O3:** Improve representation of AIS dynamics and integrate this knowledge into ice sheet-climate models.
- **O4:** Quantify AIS melt sensitivity to climate forcing and reduce the ‘deep uncertainty’ in freshwater flux and SLR projections to 2300.
- **O5:** Assess how global ocean circulation is impacted by freshwater discharge from the northern and southern ice sheets.
- **O6:** Assess the ocean impact on key global climate metrics from polar ice sheet melt to 2300 and beyond.
- **O7:** Deliver free and open data access and contribute to international assessments, climate model development, observing initiatives and policymakers.



# Project structure



- **1:** Subpolar ocean heat and freshwater (FW) delivery to AIS (WP 1)
- **2:** Ice shelf-ocean interaction (WP 2)
- **3:** Whole AIS reconstruction, FW fluxes and improvement in models (WP 3)
- **4:** Future FW flux projections and understanding of AIS instability (WP 4)
- **5:** Modelling of ocean response to ice sheet melt (WP 5)
- **6:** Modelling of ocean-ice feedbacks and impact on climate (WP 6)
- **7:** Climate assessments and advice to policymakers and public (WP 7-9)



# People – WP leaders



## WP1: Oceans



Pierre Dutrieux: BAS  
Markus Janout: AWI

## WP2: Ocean-ice sheet



Nicolas Jourdain: IGE  
Anna Wåhlin: U.Got.

## WP3: AIS present



Ruth Mottram: DMI  
Gael Durand: IGE

## WP4: AIS future



Jan De Rydt: U. Northumbria  
Frank Pattyn: ULB

## WP5: Ocean response



Elaine McDonagh:  
NORCE  
Petra Langebroek:  
NORCE

## WP6: Climate response



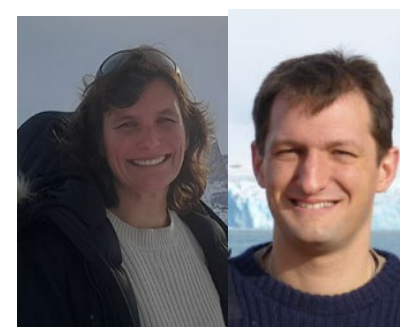
Ricarda Winkelmann:  
PIK  
Tony Payne: U.Bristol

## WP7: Data



Antonio  
Novellino:  
ETT

## WP8: Science coord



Ruth Mottram: DMI  
Andrew Meijers:  
BAS

## WP9: Comms, impacts



Sarah Coombs: BAS  
Elaina Ford: BAS  
Renuka Badhe: EPB



# Future Events

- Webinar Series – 1st EPB hosted meeting scheduled March 23<sup>rd</sup> 15:00 CET
- OCEAN:ICE themed breakout discussion at IUGG Berlin, July 23
- OCEAN:ICE themed session at SOOS symposium, Hobart Aug 23
- Workshop with ESA CCI and EO on ice shelf mass balance: Earth-Observation Modelling workshop: most likely 23<sup>rd</sup>-24<sup>th</sup> – Ruth Mottram
- 36th Forum for Research into Ice Shelf Processes, Ocean-Ice Interactions 19-22 June 23 Stalheim Norway

<https://www.tipaccs.eu/frisp2023/>

A promotional poster for the OCEAN:ICE Introductory Webinar. The background is a photograph of a snowy, icy landscape. At the top left, the OCEAN:ICE logo and the European Polar Board logo are displayed. The main title 'OCEAN:ICE INTRODUCTORY WEBINAR' is centered in large, bold, dark blue letters. Below the title, a smaller line of text states: 'This webinar will be the first in a series introducing the EU-funded OCEAN:ICE project.' The date and time '23 March 2023 15:00 CET (GMT+1)' are prominently displayed in a blue banner. A QR code is located on the right side of the banner. At the bottom left, the European Union flag is shown, followed by text indicating the webinar is co-funded by the European Union, Horizon Europe Funding Programme for research and innovation under grant agreement Nr. 101060452 and by UK Research and Innovation, with a link to https://ocean-ice.eu/. A small vertical credit line on the right edge reads '@ Dr Renuka Bashe'.

# THANK YOU!

Website:

<https://ocean-ice.eu/>

Twitter:

[https://twitter.com/OCEANICE\\_EU](https://twitter.com/OCEANICE_EU)

Facebook:

<https://www.facebook.com/OCEANICEEU>



OCEAN:ICE is co-funded by the European Union, Horizon Europe Funding Programme for research and innovation under grant agreement Nr. 101060452 and by UK Research and Innovation

