



OCEAN:ICE

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



EU Polar Cluster Community Meeting
18th 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.

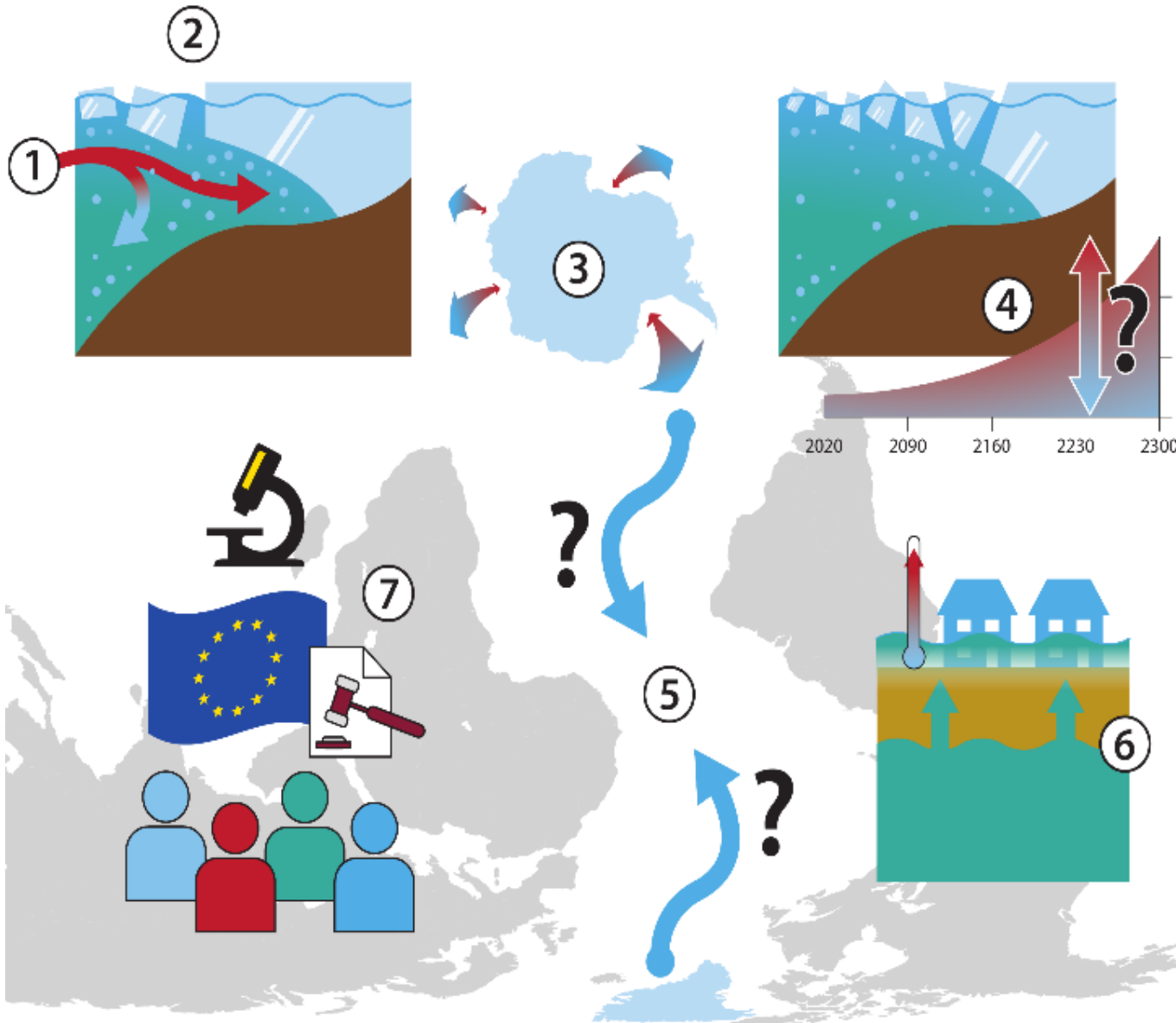
Objectives



- **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

WP6: Climate response

WP7: Data

WP8: Science coord

WP9: Comms, impacts



Elaine McDonagh: NORCE
Petra Langebroek: NORCE



Ricarda Winkelmann: PIK
Tony Payne: U.Bristol



Antonio Novellino: ETT



Ruth Mottram: DMI
Andrew Meijers: BAS



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



Future Events

- Webinar Series – 1st EPB hosted meeting scheduled March 23rd 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 23rd-24th – Ruth Mottram
- 36th Forum for Research into Ice Shelf Processes, Ocean-Ice Interactions 19-22 June 23 Stalheim Norway

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

The poster for the OCEAN:ICE Introductory Webinar features a background image 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, 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 next to the text: '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 https://ocean-ice.eu/'. A small vertical credit '© Dr. Renuka Bashe' is visible on the right edge of the poster.

THANK YOU!

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

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