

IACS-IAPSO Joint Commission on Ice-Ocean Interactions (JCIOI): Annual Report 2024

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The Joint Commission on Ice-Ocean Interactions (JCIOI) between IACS and IAPSO aims to address knowledge gaps in ice-ocean interactions by globally coordinating and engaging in research and development related to understanding, observing and modelling ice-ocean interactions.

Key activities

IAPSO Best Practice Study Group

JCIOI is leading an IAPSO Best Practice Study Group to develop a Framework for observing and modelling ocean-driven melt in Antarctica. We will host a workshop in September, in conjunction with the EU Horizon Project OCEAN:ICE annual meeting, to determine the first steps in reconciling observations and measurements of melt across different platforms and with ocean and ice sheet models at various scales. The Framework will provide a strong foundation for the further development of a Framework for Observing and Modelling Ice-Ocean Interactions (FUSION) in Antarctica, the case for which we presented at recent international symposia, including: the AGU Fall Meeting 2023, Ocean Sciences 2024, and the EGU General Assembly 2024. The opportunity to test the Framework for ocean-driven melt observations via the upcoming Antarctica InSync initiative will be explored.

Online workshop on ice-ocean interactions: 14-18 October 2024

Building on the success of the previous online workshop hosted by JCIOI in October 2022, this workshop aims to draw together researchers interested in the processes that govern ocean-driven melt of glaciers and ice sheets across a range of locations and timescales, allowing them to share knowledge across research areas and identify critical knowledge gaps. In particular, we will focus discussions on recent progress and developments since the 2022 workshop, with potential themes including:

- Grounding zone observation
- New methods and techniques for estimating and modelling ocean-driven melt rates at high resolutions (including ice shelves and tidewater glaciers)
- Feedbacks between melt and larger scale circulation
- Progress towards a unified calving law/model
- Use of machine learning and emulators in estimating melt rates

The workshop will be entirely online, with a mixture of keynote presentations, conference-style science talks and breakout sessions spread over a broad schedule to facilitate interactions across time zones.

Other information

We hold monthly committee meetings throughout the year. More information on our activities and resources from the 2022 workshop are available via our website:

<https://sites.google.com/view/jcioi/home> and X/Twitter account (@JCIOI1)