

SCAR2020P25: Sea ice in the atmosphere-ice-ocean-biosphere system

Convenors: Petra Heil, Klaus Meiners, Rob Massom, and Pat Wongpan

Session 1: 27 July 2020 at 1600 – 1800 (Hobart time: AEST: UTC+10)

<https://utas.zoom.us/j/99835602699>

(Meeting ID: 998 3560 2699, Password: -> Enquire from session chairs.)

Time	Speaker	Title
1600-1605	Convenors	Zoom register and introduction to sea ice in the atmosphere-ice-ocean-biosphere system
1605-1620	Alex Fraser	Circumpolar Antarctic landfast sea ice extent and variability, 2000-2018
1620-1635	Pat Langhorne	Airborne measurements of land-fast sea-ice thickness in the SW Ross Sea
1635-1650	Jiechen Zhao	The influence of snow on landfast ice in Prydz Bay, East Antarctica
1650-1655	Break	
1655-1710	François Fripiat	The biogeochemical role of a microbial biofilm in sea ice: Antarctic fast ice as a case study
1710-1725	Hakase Hayashida	Introduction of the Ice Algae Model Intercomparison Project (IAMIP2)
1725-1740	Joey Voermans	Ocean wave observations in Antarctic pack ice
1740-1755	Dolors Vaque	Crucial role of Antarctic virioplankton in organic primary aerosol production
1755-1800	All	Discussion

Session 2: 27 July 2020 at 2100 – 2300 (Hobart time: AEST: UTC+10)

<https://utas.zoom.us/j/99948395964>

(Meeting ID: 999 4839 5964, Password: -> Enquire from session chairs.)

Time	Speaker	Title
2100-2115	Junde Li	Intercomparison of Pan-Arctic sea ice simulation in ROMS-CICE and ROMS-Budgell
2115-2130	Stefanie Arndt	Seasonal and interannual variability of landfast sea ice in Atka Bay, Weddell Sea, Antarctica
2130-2145	Sebastian Gerland	Opportunity-based fast ice thickness observations in Rektange-bukta off Dronning Maud Land, Antarctica: Monitoring so far and future perspectives
2145-2200	Letizia Tedesco	Ice algal phenology in a changing cryosphere
2200-2205	Break	
2205-2210	Sian Henley	Nutrient biogeochemistry in Antarctic land-fast sea ice and exchange with the surface ocean
2210-2225	Marcello Vichi	A link between CMIP5 phytoplankton phenology and sea ice in the Atlantic Southern Ocean
2225-2240	Michael Dinniman	Direct and indirect contributions of ice shelves to micronutrient supply to the surface waters around Antarctica
2240-2255	Katarina Abrahamsson	TBC
2255-2300	All	Discussion & Close

To obtain ZOOM password, pls email: petra.heil@utas.edu.au

Session 25: Sea ice in the atmosphere-ice-ocean-biosphere system: How, where and why is it changing, and what are the effects?

Session Description

While there is strong focus on rapid change occurring in Arctic sea ice, relatively little is known about the complex sea-ice environment around Antarctica (comprising both pack and fast ice), how and why it is changing and varying, and the wide-ranging physical, biological and chemical effects of such change/variability. Improved understanding of the southern coupled sea ice-ocean-atmosphere-biosphere system is required to truly explain the marked and baffling recent reversal in overall sea-ice extent – from a slight positive trend to successive record maxima peaking in 2014, followed by a rapid decline. While sea-ice extent and concentration are monitored reasonably accurately from space, much remains to be learned about the processes driving annual advance and retreat; the role of snow; sea-ice interaction with the ice sheet; sea ice as a habitat; sea-ice biogeochemical processes; and teleconnections with lower latitudes (including sea-ice relationships with southern hemisphere weather and climate).

A forum for interdisciplinary sea-ice research, this session invites presentations with a focus on:

- (i) Antarctic sea ice in the ocean-cryosphere-atmosphere-biosphere system, and
- (ii) sea ice as an active biogeochemical interface and a reservoir for pollutants.

We encourage a holistic discussion through presentations on sea-ice process, observational, modelling and remote-sensing studies.