

Category

OS Ocean, Sea Ice

Session Number

OS-2

Session Title

Interdisciplinary research on sea-ice biogeochemistry and associated ecosystems

Session Description

The rapid change of sea-ice habitats in both Polar Oceans will significantly impact the ecosystems and biogeochemical processes within sea ice and at its interfaces. The Arctic is transforming rapidly from thick multi-year ice to first-year ice, becoming more similar to the Antarctic icescape. The strategies evolved by the Antarctic organisms to cope with the annual wax and wane of sea ice might thus provide inference for the Arctic case.

We aim to bring together researchers working in both Polar Regions to stimulate knowledge exchange and work towards comparison of changing dynamics and impacts on ecosystem functions and services in both Arctic and Antarctic sea-ice ecosystems, joining interdisciplinary sea-ice research from three different angles:

- 1) New approaches to investigate the multi-scale variability of sea-ice habitats using sampling platforms, such as ROVs, AUVs, aircraft, and ice-moored observatories;
- 2) Biodiversity and biogeochemistry of sea-ice habitats, their relationships with environmental variability and ecosystem functions; and
- 3) Numerical models as tools to understand past and present dynamics, and predicting future changes in ice-associated ecosystems.

This session calls for contributions on experimental, observational, and modeling studies focused on sea-ice biogeochemical atmosphere-sea ice-ocean interactions, biota and processes, also as part of the BEPSII (Biogeochemical Exchange Processes at Sea-Ice Interfaces) Cliv/IASC/SCAR/SOLAS WG.

Keywords: Sea-ice ecology, sea-ice biology, sea-ice ecosystem, sea-ice biogeochemistry, cross-disciplinary, Arctic, Antarctic, experimental work, ecosystem models, new technologies, climate change.

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