



INTERNATIONAL GLACIOLOGICAL SOCIETY

International Symposium on  
Sea Ice in a Changing Environment



Hobart, Tasmania, Australia

10–14 March 2014

*Co-sponsored by*  
Antarctic Climate and Ecosystems CRC  
and the Australian Antarctic Division

FIRST CIRCULAR

February 2013

<http://www.igsoc.org/symposia/2014/hobart>

<http://igs2014.seaice.acecrc.org.au>

The International Glaciological Society will hold an International Symposium on 'Sea Ice in a Changing Environment'. The symposium will be held in Hobart, Tasmania, Australia, from 10 to 14 March 2014. Registration will begin on 9 March.

## THEME

Sea ice plays a crucially important yet highly dynamic role in global climate and high-latitude ecosystems. It forms a highly sensitive indicator and modulator of climate change and variability. Sea ice is currently one of the fastest responders to changing climate conditions across the globe – with both hemispheres responding differently overall but with regional similarities. This symposium presents a timely opportunity to showcase recent advances in our knowledge and technological capabilities, and to encourage holistic discussion of the most recent change, long-term trends and variability in the sea-ice environment, as reflected in the suggested topics.

## TOPICS

Topics include, but are not limited to

1. **Pole to pole: Large-scale change and variability in sea ice and climate**, including regional to hemispheric response, teleconnections, attribution of change (including large-scale atmospheric and oceanic circulation changes and feedback mechanisms), and possible extreme events.
2. **Seymour Laxon celebration session: Advances in sea-ice analysis using remotely sensed data**, including hemispheric and global assessment, sea-ice thickness and volume, algorithm development and validation, accuracy of retrieved parameters, multi-sensor synergies, new technologies.
3. **Advances in instrumentation and observation methods**, including non-destructive observations, autonomous observatories (including underwater and aerial platforms), new analytical methods.
4. **The challenge of melding sea-ice modelling with observations**, including sea-ice and coupled model validation, advances in numerical parameterizations, current gaps, translating observations into models, IPCC-AR5 ensemble synthesis.
5. **A new regime for sea-ice growth and decay?**, including new observations of sea-ice growth and decay processes and of the characteristics of the sea-ice matrix, including the contribution of snow to sea-ice formation and decay (e.g. snow-ice and melt-pond formation), micro-physical properties.
6. **Snow on sea ice**, including snow thickness, density, characteristics and processes, gas exchange, surface radiation budget, and remote sensing considerations.
7. **Interactions between sea-ice drift and deformation and sea-ice morphology**, including ice kinematics, dynamics and mechanics, linkage to floe-size distribution and ice concentration, and dynamic effects on the sea-ice matrix.
8. **Ocean-ice-atmosphere interactions**, including boundary-layer processes, waves, tides, drag coefficients, synoptic scale forcing.
9. **The marginal ice zone**, including processes at the outer ice-ocean boundary, numerical and experimental advances in wave-ice interaction, wave attenuation, and floe-size modification.
10. **Sea ice interaction with ice sheets, ice shelves and icebergs**, including fast ice, polynyas, basal melt and refreeze, water-mass modification, freshwater balance, oceanic heat content and possible linkage to ice-shelf stability.

11. **The role of sea ice in ecosystems dynamics**, including sea-ice biota, primary productivity, microorganisms, microbial food webs, trophic levels.
12. **Sea-ice biogeochemical properties and processes in a world of change**, including gas fluxes, nutrients, trace elements, carbon and oxygen cycling, brine composition and nutrients.
13. **Palaeo and pre-satellite sea-ice distribution**, including historical records and observations, reconstructions from ice core records and deep-sea sediments.

#### ABSTRACT AND PAPER PUBLICATION

Participants wishing to present a paper at the workshop are required to submit an abstract. There will be oral as well as poster presentations. A pre-print of submitted abstracts will be provided for all participants at the symposium. The Council of the International Glaciological Society has decided to publish a thematic issue of the *Annals of Glaciology* on topics consistent with the Symposium themes. Participants and non-participants alike are encouraged to submit manuscripts for this volume.

#### SYMPOSIUM ORGANIZATION

Magnús Már Magnússon (International Glaciological Society)

#### SCIENCE STEERING AND EDITORIAL COMMITTEE

Petra Heil (Chief Editor), Robert Massom; further associate editors will be determined later.

#### LOCAL ORGANIZING COMMITTEE

Robert Massom (Chair), Petra Heil, Phil Reid, Klaus Meiners, Jan Lieser, Ian Allison, Jo Jacka, Tony Press and Jessica Melbourne-Thomas.

#### ADDITIONAL ACTIVITIES

A two-day workshop on SIPEX 2012 will be held in conjunction with this symposium. A half-day excursion will be organized mid-week for participants to experience some of Tasmania's unique offerings. A public science day involving interested participants is currently planned for the beginning of the symposium (probably on 9 March 2014).

#### FURTHER INFORMATION

If you wish to attend the symposium please log onto the IGS website at <http://www.igsoc.org/symposia/2014/hobart/preregistration/> and register your details and interest in attending the symposium.

Although we strongly encourage prospective attendees to register online it can also be done by filling in and returning the form on the back page of this circular as soon as possible.

The Second Circular will give further information about accommodation, the general scientific programme, additional activities, preparation of abstracts and final papers. Copies of the Second Circular will be sent to those who pre-register or return the attached reply form. Members of the International Glaciological Society will automatically receive one. Information will be updated on the conference website, <http://www.igsoc.org/symposia/2014/alberta/> and the local website <http://igs2014.seaice.acecrc.org.au> (a link will be introduced on the IGS site).

**INTERNATIONAL SYMPOSIUM ON  
SEA ICE IN A CHANGING ENVIRONMENT**

Hobart, Tasmania, Australia

10–14 March 2014

Family name: \_\_\_\_\_

Given name(s): \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tel: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

I hope to participate in the Symposium in March 2014

I expect to submit an abstract

My abstract will be most closely related to the following topic(s):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I would be interested in participating in the public science day.

PLEASE RETURN AS SOON AS POSSIBLE TO:

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