



The 22nd International Symposium on Polar Sciences: *The Future of the Arctic: Science and Governance*

May 10-11, 2016
Korea Polar Research Institute, Songdo, Incheon
Republic of Korea

First Circular

We are pleased to announce that Korea Polar Research Institute will hold the 22nd International Symposium on Polar Sciences in Incheon, the Republic of Korea on May 10-11, 2016.

THEME

Recent climate changes in the Arctic have radically transformed the region's environmental, economic, and political landscapes and these changes have also affected other parts of the globe, leaving the world with a range of issues and challenges.

The 2016 International Symposium on Polar Sciences is organized in an effort to understand the accelerating changes in the Arctic and to reflect on how to prepare for their anticipated impacts, and thus is entitled "The Future of the Arctic: Science and Governance".

SESSIONS (TOPICS)

The symposium is organized into six sessions to share and discuss current scientific achievements and law and policy based efforts, which will help guide future research and observations of the rapidly changing Arctic.

Observations of the Changing Arctic Atmosphere

The Arctic atmosphere is changing rapidly due to many different factors. A better understanding of pollutant transport, greenhouse gas emission, aerosol-cloud processes and their feedback roles in the Arctic is critical to understanding the changing Arctic atmosphere and to improve predictions of how swiftly and extensively Earth's climate will change in future. This session will deal with issues related to observation-based atmospheric research activities in the Arctic region.

Modelling the Physical Processes of Arctic Climate System

Since the industrial revolution, concomitant and persistent influences of anthropogenic forcing have caused the Arctic to warm faster than any other region in earth. Therefore, a proper understanding and modelling of various aspects of the Arctic climate system and its amplification is key to successful prediction of future climate change. In this session, essential modelling issues in the representation of Arctic climate system are carefully selected and presented to advance our current common understanding of this topic.

Climate Change and Arctic Terrestrial Ecosystems

The Arctic is undergoing a dramatic process of change which is linked to wider scale climate changes. In order to predict the potential consequences of climate change in the future, it is important to understand how the ecosystem's structure and dynamics shift with climatic change. In this session, ecological responses to recent climate change in the Arctic terrestrial ecosystems will be discussed.

Sea Ice Networks for Observation and Prediction

Our ability to predict weather and sea ice condition requires in-situ observations of surface meteorology and ice motion.

These observations are assimilated into Numerical Weather Prediction (NWP) models that are used to forecast weather on synoptic time scales, and into the many long-term atmospheric re-analyses that are used for innumerable climate studies. In-situ observations of sea ice motion are also important for estimating the drift of various regions and types of sea ice, and for understanding the deformation dynamics of ridging and rifting of this ice, which changes the thickness distribution of sea ice. Over the Arctic and Southern Oceans, these fundamental observing networks are maintained by the international Arctic Buoy Programme (IABP), and International Programme for Antarctic Buoys (IPAB).

Science, Law and Arctic Future

This session will address various issues in international norms relating to scientific research in the Arctic. The "Draft Agreement on Enhancing International Arctic Scientific Cooperation" recently produced by the Arctic Council's Science Cooperation Task Force (SCTF) is likely to develop into a normative framework of Arctic scientific cooperation in the future. Scope and influences of this draft agreement will be discussed in the session. Science informs the legislative process by providing a "proof of facts", while legal policy can provide science with the institutional support that science calls for its promotion. Possible interaction between law and science in the future Arctic will be discussed.

Social and Human Science Research on the Arctic; Recent Korean Efforts

Korea's accreditation of Arctic Council observer status in 2013 was an important occasion for the Korean social and human science community to begin Arctic research in a genuine way. This session will address social issues in the Arctic and recent Korean endeavors in Arctic social and human science research such as Arctic policy, international cooperation, Arctic residents, and business opportunities in the Arctic.

Abstract Submission

Please submit the abstract at the symposium website (<http://symposium.kopri.re.kr>) no later than **March 25th, 2016**.

Registration

Please register at the symposium website (<http://symposium.kopri.re.kr>) no later than **April 22th, 2016**.

If you have any problem or difficulties, please do not hesitate to contact the symposium secretariat (symposium@polar.re.kr).

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