

The 12th Symposium on Polar Science
15 – 18 November 2021

National Institute of Polar Research (NIPR)
Research Organization of Information and Systems (ROIS)

Local Organization Committee
Masaki Okada (in-chief)

第12回極域科学シンポジウム
大学共同利用機関法人 情報・システム研究機構
国立極地研究所
2021年11月15日(月)～11月18日(木)

実行委員会
岡田雅樹 (委員長)

○ **The 12th Symposium on Polar Science**

The 12th Symposium on Polar Science hosted by the National Institute of Polar Research (NIPR), Tokyo, Japan, will be held with an Online Meeting System, from 15 to 18 November 2021. The NIPR is organizing this annual symposium to present and promote a wide variety of polar scientific research and interdisciplinary studies. We look forward to your active participation.

○ **Local Organization Committee**

Masaki Okada (in Chief)

Teruo Aoki (IA)

Yoshihiro Tomikawa (IW)

Naoya Imae (OA)

Wataru Kokubun (OB)

Jun'ichi Okuno (OG)

Jun Inoue (OM)

Yoshimasa Tanaka (OS)

Research Promotion Division, Tachikawa Administration Office,
Central Administration Department, ROIS

○ **Symposium schedule**

Real-time Oral session: 15 – 18 November 2021

○ **Style and language for presentation**

Presentation style is either real-time oral presentations (ZOOM) or poster presentations by uploading files to the Online Meeting System (OMS). Some of the sessions will open oral presentations only. We ask you to indicate your preference at the timing of abstract submission. The Local Organizing Committee (LOC) will make decisions for style of each presentation. Language for real-time oral presentations and uploading poster files are English as a rule.

○ **Outline of the sessions**

➤ **Interdisciplinary sessions**

◇ [IW] Whole atmosphere

◇ [IA] Arctic Research

➤ **Ordinary sessions**

- ✧ [OA] Antarctic meteorites
- ✧ [OB] Polar biology
- ✧ [OG] Polar geosciences
- ✧ [OM] Polar meteorology and glaciology
- ✧ [OS] Space and upper atmospheric sciences

○ **Schedule of the real-time oral sessions**

○ **Important date**

1 September	Pre-Registration opens.
15 October	Abstract Submission finishes. (Deadline changed to 15 October)
Mid October	Notification of acceptance for the Abstract Submissions.
Late October	Release of session arrangement on the web. Notification of the schedule of presentations.
Early November	Release of Programs of presentation on the web.
15-18 November	Real-time oral sessions.
18 November	Online Meeting site closes.

○ **Session Target**

➤ **Interdisciplinary Sessions**

✧ **[IA] Arctic research**

This session invites presentations from a wide range of topics related to the Arctic, including all disciplines of natural sciences, engineering, humanities and social sciences.

The Arctic is experiencing rapid environmental and amplified climatic changes, creating significant challenges for people living in this region and various impacts around the globe. We have been trying to elucidate the whole picture of these changes in the Arctic and their phenomena, but many open questions still remain. The Arctic change also has impacts on the global climate as well as ecosystems and human societies in higher-middle latitudes, which is also a scope of the session.

We welcome the contributions on the latest findings on the ongoing change in the Arctic, as well as its past change and perspectives on future change, improved understanding of processes and mechanisms, its impact on our society.

Date: Thu. 16 November 2021

Conveners: Hiroyuki Enomoto, Hiroshi Miyaoka, Kentaro Nishimoto and Teruo Aoki (NIPR)

✧ **[IW] Whole Atmosphere**

Earth's lower, middle, and upper atmosphere interact with one another through various kinds of vertical coupling processes induced by waves, physical and chemical processes, and energy input from the sun and magnetosphere. It compelled us to deal with the earth's atmosphere comprehensively, so that a new concept of "whole atmosphere" was recently introduced to the atmospheric research community. In the Antarctic, the first MST (Mesosphere-Stratosphere-Troposphere)/IS (Incoherent Scatter) radar has been operated since 2011 as a part of the JARE (Japanese Antarctic Research Expedition) phase VIII and IX prioritized projects. These projects aim at detecting climate change signals in each layer of the Antarctic atmosphere and exploring vertical coupling processes between these layers through the coordinated observations including the MST/IS radar in the Antarctic. These backgrounds stimulated us to propose this "whole atmosphere" session. Viewpoints of both aeronomy and meteorology, and related interdisciplinary studies, are essential to understanding a wide altitude region from the troposphere to the thermosphere. This session provides an opportunity to present and discuss observational, theoretical, and modeling studies focusing on a variety of phenomena in each layer or across multiple layers of the earth's atmosphere.

Date: Tue. 16 November 2021

Conveners: Mitsumu K. Ejiri, and Takanori Nishiyama (NIPR)

➤ **Ordinary Sessions**

✧ **[OA] Antarctic Meteorites**

This session is held to present recent research outcomes for Antarctic meteorites and micrometeorites. It will also be an opportunity for general and topical discussion sessions dealing with new data from non-Antarctic meteorites and extraterrestrial materials, and related experimental and theoretical works.

Date (Real-time session): Thu. 18 November 2021

Convener: Naoya Imae (NIPR)

OA session is co-sponsored with ISAS/JAXA Hayabusa 2021 Symposium.

✧ **[OB] Polar Biology**

This session covers the following research topics. Polar marine ecosystem - biogeochemistry, environmental DNA, and ecology of phytoplankton to apex predators
Polar terrestrial ecosystem -environment, biodiversity, and biological responses

Date (Real-time session): Wed. 17 November 2021

Convener: Nobuo Kokubun (NIPR)

✧ **[OG] Polar Biology**

This session covers research topics from the fields of geology, mineralogy, geomorphology, quaternary research, geodesy, and geophysics.

Date (Real-time session): Mon. 15 November 2021

Convener: Jun'ichi Okuno (NIPR)

✧ **[OM] Polar Meteorology and Glaciology**

This session covers research topics from the fields of atmospheric science, meteorology, glaciology, sea ice, oceanography, and paleoclimatology.

Date (Real-time session): Wed. 17 November 2021

Convener: Jun Inoue (NIPR)

✧ **[OS] Space and upper atmospheric sciences**

This session covers the solar-terrestrial science related to topics in the polar upper atmosphere, ionosphere and magnetosphere.

Date (Real-time session): Wed. 17 (- Thu. 18) November 2021

Convener: Yoshimasa Tanaka (NIPR)

○ **Information for presenters**

➤ **Poster presentation**

You can upload the poster file in pdf format to the online meeting system (OMS) from early November. The participants can browse posters and write comments to each poster presentation. The presenter can respond to those comments. The discussion time will continue until the system closes at November 18.

➤ **Real-time Oral presentation**

The length of oral presentation is up to the session convener. Please confirm the time schedule of your talk in the program. Please note that your time window for your talk includes (i) presentation time, (ii) time for discussions and (iii) time to switch speakers.

After the real-time oral session, your presentation video and/or slide will be uploaded to OMS. You can discuss on OMS until November 18.

For any questions, please ask the convener of each session or the LOC.

○ **Information for participants**

➤ **Pre-registration**

All participants are required to register beforehand through the online registration system.

Only the registered participants to the 12th Symposium of Polar Science can sign-in to the online meeting system (OMS) and real-time oral sessions.

The details of OMS will be announced later.

➤ **Symposium program and Abstracts**

The PDF version of the symposium program is downloadable from this web site.

Web image files which contain the program and abstracts are downloadable from the web site. It will be released on early November.

○ **Participants**

➤ **Presentations**

Session	Oral	Poster	Total
IA	11	12	23
IW	14	5	19
OA	11	9	20
OB	10	25	35
OG	9	16	25
OM	14	31	45
OS	26	- ※	26

※ Poster presentation was not scheduled for OS session.

➤ **Participants**

Total	From JP	Foreign Countries
438	364	74

○ **Timetable**

Date	Time	Real-time Oral Session (ZOOM)			
15 Nov (Mon)	AM	10:30-12:10 OG			
		Lunch time			
	PM	13:30-14:50 OG			
	Poster	15:30-16:00 Poster Session Core Time (for session OG)			
Date	Time				
16 Nov (Tue)	AM	9:30-12:30 IA			Hayabusa
		Lunch time			
	PM		14:00-16:30 IW		Hayabusa
	Poster	17:00-17:45 3-minute poster appeal (for session IA) 17:45-18:30 Poster Session Core Time (for session IA)	16:40-16:45 1-minute poster appeal (for session IW) 16:45-18:00 Poster Session Core Time (for session IW)		
Date	Time				
17 Nov (Wed)	AM	9:55-11:30 OB	9:30-12:15 OM	9:00-10:45 IW 11:00-12:00 OS	Hayabusa
		Lunch time			
	PM	12:45-14:15, 14:30-16:00 OB	13:30-16:20 OM	13:30-17:30 OS	Hayabusa
	Poster	16:15-17:45 Poster Session Core Time (for session OB)			
Date	Time				
18 Nov (Thu)	AM			9:00-11:45 OS	
		Lunch time			
	PM				13:10-16:15 OA

○ **Programs and Abstracts**

➤ **Session IA**

Conveners: Hiroyuki Enomoto, Hiroshi Miyaoka, Kentaro Nishimoto, and Teruo Aoki

➤ **Session IW**

Conveners: Yoshihiro Tomikawa, Mitsumu K. Ejiri, and Takanori Nishiyama

➤ **Session OA** Convener: Naoya Imae

➤ **Session OB** Convener: Nobuo Kokubun

➤ **Session OG** Convener: Jun'ichi Okuno

➤ **Session OM** Convener: Jun Inoue

➤ **Session OS** Convener: Yoshimasa Tanaka

○ **Online Sites**

➤ **Top Page** <https://www.nipr.ac.jp/symposium2021/>

➤ **Registration Site** <https://www.formdb.jp/nipr/top.php>

➤ **Online Meeting System** <https://ads.nipr.ac.jp/PolarSymposium2021/>

Online Meeting System is supported by ADS and AADS platform managed by Polar Environment Data Science Center (PEDSC), Joint Support-Center for Data Science Research, Research Organization of Information and Systems (ROIS).

➤ **Acknowledgement**

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