

The 11th Symposium on Polar Science

ONLINE MEETING PROGRAM

Online meeting period: 16 November - 18 December 2020

Real-time Oral session: 1 – 3 December 2020



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Welcome

Welcome to the 11th Symposium on Polar Science

The 11th Symposium on Polar Science hosted by the National Institute of Polar Research (NIPR), Tokyo, Japan, will be held with an Online Meeting System by file upload from 16 November to 18 December, and a real-time oral session from 1st to 3rd December 2020. The NIPR is organizing this annual symposium to present and promote a wide variety of polar scientific research and interdisciplinary studies. The symposium includes a special session, the theme of which is “Accelerating Arctic research: Recent progress and future prospect of Arctic research”. Accompanying this special session will be parallel sessions, which will include ordinary sessions and interdisciplinary sessions.

We look forward to your active participation.

Kunio T. Takahashi
Secretary,

The 11th Symposium on Polar Science executive committee

Session list

Special Session

[S] Accelerating Arctic research: Recent progress and future prospect of Arctic research

Ordinary Sessions

[OA] Antarctic meteorites

[OB] Polar biology

[OG] Polar geosciences

[OM] Polar meteorology and glaciology

[OS] Space and upper atmospheric sciences

Interdisciplinary Sessions

[IW] Whole atmosphere

[IN] New insights of ship-based interdisciplinary study in Southern Ocean

Real-time Oral session schedule

| Date | Time | Real-time Oral Session (ZOOM) | | | |
|----------------|------------------|-------------------------------|-------------------|-------------------|-------------------|
| 1 Dec (Tue) | AM | 10:00-12:15 S | | | |
| | Lunch time | | | | |
| | PM | 13:15-16:40 S | | | |
| | PM | 16:45-18:00 S | | | |
| PM | 18:00-19:20 S | | | | |
| 2 Dec (Wed) | AM | 10:00-11:30 OB | | | |
| | Lunch time | | | | |
| | PM | 13:00-14:30 OB | 13:00-14:30 OS | 13:00-14:15 OG | |
| | PM | 14:45-16:45 OB | 14:45-16:15 OS | 14:30-17:00 OG | |
| 3 Dec (Thu) | AM | 09:30-12:00 OM | | | 09:25-11:45 OA |
| | Lunch time | | | | |
| | PM | 13:30-14:30 OM | 13:30-15:00 IW | 13:00-15:15 IN | 13:30-14:50 OA |
| | PM | 14:40-15:40 OM | 15:30-17:30 IW | 15:30-18:00 IN | |

Information for presenters

Online Meeting System

Please access the Online Meeting System via the following link:

<https://ads.nipr.ac.jp/PolarSymposium2020/>

Poster presentation

You can upload the poster file in PDF format to the online meeting system from November 16th. The participants can browse the system and write comments to each poster presentation. The presenter can correspond to those comments. The discussion time will continue until the system closes on December 18.

Real-time Oral presentation

The real-time oral session will be held using the “ZOOM Meeting”. Zoom URL will be posted in the online meeting system on the previous day.

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 the online meeting system. You can discuss on online system until December 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 11th Symposium of Polar Science can sign in to the online meeting system and real-time oral sessions.

Deadline for pre-registration for participation is November 30th.

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.

| | | | |
|---------------------------------|--|-----------------------------------|----------------------------|
| Special session | Interdisciplinary sessions | Ordinary sessions | Time Table |
|---------------------------------|--|-----------------------------------|----------------------------|

The 11th Symposium on Polar Science - Session Schedule

Click a session in the time table below or select a session in the pull-down menu above or in the [session list](#) below to show the selected session program. Session codes (like S, IW, OB...) are described in the [session list](#) below.

| Date | Time | Real-time Oral Session (ZOOM) | | | |
|----------------|-------------|-------------------------------|----------------------|----------------------|----------------------|
| 1 Dec (Tue) | AM | 10:00-12:15 S | | | |
| | Lunch time | | | | |
| | PM | 13:15-16:40 S | | | |
| | | 16:45-18:00 S | | | |
| | | 18:00-19:20 S | | | |
| Date | Time | Same as above | Same as above | Same as above | Same as above |
| 2 Dec (Wed) | AM | 10:00-11:30 OB | | | |
| | Lunch time | | | | |
| | PM | 13:00-14:30 OB | 13:00-14:30 OS | 13:00-14:15 OG | |
| | | 14:45-16:45 OB | 14:45-16:15 OS | 14:30-17:00 OG | |
| | | | | | |
| Date | Time | Same as above | Same as above | Same as above | Same as above |
| 3 Dec (Thu) | AM | 9:30-12:00 OM | | | 9:25-11:45 OA |
| | Lunch time | | | | |
| | PM | 13:30-14:30 OM | 13:30-15:00 IW | 13:00-15:15 IN | 13:30-14:50 OA |
| | | 14:40-15:40 OM | 15:30-17:30 IW | 15:30-18:00 IN | |

Session list and session code

Special session

- ▶ [\[S\] Accelerating Arctic research: Recent progress and future prospect of Arctic research](#)

Interdisciplinary sessions

- ▶ [\[IW\] Whole atmosphere](#)
- ▶ [\[IN\] New insights of ship-based interdisciplinary study in Southern Ocean](#)

Ordinary sessions

- ▶ [\[OA\] Antarctic Meteorites](#)
- ▶ [\[OB\] Polar Biology](#)
- ▶ [\[OG\] Polar Geosciences](#)
- ▶ [\[OM\] Polar Meteorology and Glaciology](#)
- ▶ [\[OS\] Space and upper-atmosphere sciences](#)

Special session

Interdisciplinary sessions

Ordinary sessions

Time Table

[Oral session](#) | [Poster session](#)

Special session

[S] Accelerating Arctic research: Recent progress and future prospect of Arctic research











Scopes

This session will consist of three parts. Part 1 reviews the collected results of ArCS (2015-2020). Part 2 introduces ArCS II (2020-2025) and its plan, along with strategic goals, priority subjects, and research infrastructures formulated based on the experience of GRENE (2011-2016) Arctic and ArCS. In Part 3, we will have a panel discussion on "Future of Arctic research". This theme addresses the prospect of Arctic research in general. Taking the implementation cycle of research projects and changes in domestic and international situations of society into consideration, we will broadly discuss the overall picture and future prospects of Arctic research.

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








Real-time Oral presentations (10:00 – 12:15, 13:15 – 18:00, 18:00 – 19:20)











Date: Tue. 1 December

| | | | | |
|--|---------------|---|---|---|
| | 10:00 - 10:05 | Opening address by the director-general of NIPR | Takuji Nakamura (NIPR) | |
| | 10:05 - 10:10 | Beginning of Special session | Kunio T. Takahashi (NIPR) | |
| Part 1: ArCS session Chair: Hiroyuki Enomoto (NIPR) | | | | |
| So1 | 10:10 - 10:25 | Overview of the Arctic Challenge for Sustainability (ArCS) project (2015-2020) | *Masao Fukasawa (JAMSTEC) |  |
| So2 | 10:25 - 10:30 | Supporting activities in the "Arctic Challenge for Sustainability (ArCS)" program | *Tetsuo Sueyoshi (NIPR), Masao Fukasawa (JAMSTEC) |  |
| So3 | 10:30 - 10:45 | Predictability study on weather and sea-ice forecasts linked with user engagement | *Jun Inoue (NIPR) , and ArCS Theme 1 members |  |
| So4 | 10:45 - 11:00 | Iron and nutrients supply to a fjord from glacier-induced pumping in northwestern Greenland | *Naoya Kanna (The University of Tokyo), Shin Sugiyama (Hokkaido University), Yasushi Fukamachi (Hokkaido University), Daiki Nomura (Hokkaido University), Jun Nishioka (Hokkaido University) |  |
| So5 | 11:00 - 11:15 | Response of lower trophic organisms to recent environmental changes in the Arctic | *Amane Fujiwara (JAMSTEC), Shigeto Nishino (JAMSTEC), Takuhei Shiozaki (JAMSTEC & The University of Tokyo), Koji Sugie (JAMSTEC), Hisatomo Waga (University of Alaska Fairbanks), Yoshiyuki Abe (Hokkaido University), Koki Tokuhiro (Hokkaido University), Yuri Fukai (Hokkaido University), Kohei Matsuno (Hokkaido University), Atsushi Yamaguchi (Hokkaido University), Toru Hirawake (Hokkaido University), Naomi Harada (JAMSTEC), Takashi Kikuchi (JAMSTEC) |  |
| So6 | 11:15 - 11:30 | Seabird responses to a rapidly changing Pacific Arctic: findings from ArCS project | *Akinori Takahashi (NIPR), Alexis Will (NIPR, Univ. Alaska Fairbanks), Jean-Baptiste Thiebot (NIPR), Alexander Kitaysky (Univ. Alaska Fairbanks) |  |
| So7 | 11:30 - 11:45 | Seasonal Variation of Wet Deposition of Black Carbon at Ny-Ålesund, Svalbard | *Tatsuhiko Mori (Tokyo University of Science), Sho Ohata (Nagoya University), Kumiko Goto-Azuma (NIPR & SOKENDAI), Yutaka Kondo (NIPR), Kaori Fukuda (NIPR), Yoshimi Ogawa-Tsukagawa (NIPR), Nobuhiro Moteki (The University of Tokyo), Atsushi Yoshida (The University of Tokyo), Makoto Koike (The University of Tokyo), Puna Ram Sinha (Indian Institute of Space Science and Technology), Naga Oshima (Meteorological Research Institute), Hitoshi Matsui (Nagoya University), Yutaka Tobo (NIPR & SOKENDAI), Masanori Yabuki (Kyoto University), Wenche Aas (Norwegian Institute for Air Research) |  |
| So8 | 11:45 - 12:00 | The Cold Water Upwelling Near the Anadyr Strait: Observations and Simulations | *Yusuke Kawaguchi (The University of Tokyo), Jun Nishioka (Hokkaido University), Shigeto Nishino (JAMSTEC), Shinzou Fujio (The University of Tokyo), Keunjong Lee (The University of Tokyo & Korea Institute of Ocean Science and Technology), Amane Fujiwara (JAMSTEC), Daigo Yanagimoto (The University of Tokyo), Humio Mitsudera (Hokkaido University), Ichiro Yasuda (The University of Tokyo) |  |
| So9 | 12:00 - 12:15 | People and community in the Arctic: overview of ArCS project in the field of humanities and social sciences | *Shinichiro Tabata (Hokkaido University) |  |
| Lunch | | | | |
| Part 2: ArCS II session Chair: Hiroshi Miyaoka (NIPR) | | | | |
| So10 | 13:15 - 13:25 | Start of Arctic Challenge for Sustainability (ArCS) II | *Hiroyuki Enomoto (NIPR) |  |

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|--|---------------|--|---|---|
| | | project (2020-2025) | | |
| So11 | 13:25 - 13:40 | Strategic Goal 1 "Advanced observation of Arctic Environmental Change" in ArCS II Project | *Teruo Aoki (NIPR), Makoto Koike (University of Tokyo), Eiji Watanabe (Japan Agency for Marine-Earth Science and Technology), Hideki Kobayashi (Japan Agency for Marine-Earth Science and Technology) |  |
| So12 | 13:40 - 13:55 | ArCS II Strategic Goal 2: Improvement of Weather and Climate Prediction | *Hiroyasu Hasumi (JAMSTEC & The University of Tokyo) |  |
| So13 | 13:55 - 14:10 | Impact of Arctic Environmental Change on Society | *Shin Sugiyama (Hokkaido University), Hiroki Takakura (Tohoku University), Akihisa Konno (Kogakuin University) |  |
| So14 | 14:10 - 14:25 | Legal and Policy Responses for a Sustainable Arctic | *Kentaro Nishimoto (NIPR) |  |
| | 14:25 - 14:35 | Q&A | | |
| So15 | 14:35 - 14:50 | Summary of the medium-range forecast of the Arctic sea ice | *Noriaki Kimura (The University of Tokyo), Hiroyasu Hasumi (The University of Tokyo), Hajime Yamaguchi (The University of Tokyo) |  |
| So16 | 14:50 - 15:05 | Monitoring of Sea Ice Thickness around Yamal Peninsula using AMSR2 | *Yurika Watanabe (Kitami Institute of Technology), Kazutaka Tateyama (Kitami Institute of Technology), Koh Izumiyama (Hokkaido University), Seita Hoshio (Japan Aerospace Exploration Agency) |  |
| So17 | 15:05 - 15:20 | Towards a deeper understanding of mechanism for amplifying the Arctic warming in the ArCS II project | *Masakazu Yoshimori (The University of Tokyo) |  |
| | 15:20 - 15:30 | Break | | |
| Part 3: Panel session Moderator: Hiroyuki Enomoto (NIPR) | | | | |
| So18 | 15:30 - 15:35 | Introduction of panel session | *Hiroyuki Enomoto (NIPR) |  |
| | 15:35 - 15:43 | Progress of Arctic research in Japan and JCAR | *Takashi Yamanouchi (NIPR) | |
| | 15:43 - 15:51 | Japan's new icebreaking research vessel plan | *Hajime Yamaguchi (The University of Tokyo) | |
| | 15:51 - 15:59 | International Perspectives on Achievements and Further Potential of Japanese Arctic Research | *Hajo Eicken (International Arctic Research Center, University of Alaska Fairbanks) | |
| | 15:59 - 16:40 | Discussion | | |
| | 16:40 - 16:45 | Break | | |
| Poster short presentation Chair: Teruo Aoki (NIPR) | | | | |
| | 16:45 - 17:48 | 3-minute poster appeal (18 short talks of Sp1 – Sp18) | | |
| | 17:48 - 18:00 | Break | | |
| Dipatch of young researchers/students to abroad Chair: Yashushi Fukamachi (Hokkaido University) | | | | |
| So19 | 18:00 - 19:20 | ArCS II Overseas Fellowship Program Session (Language: Japanese) | *Yasushi Fukamachi (Hokkaido University), young researchers/students |  |

Poster presentations (16 November - 18 December)

| | | | |
|-----|--|---|---|
| Sp1 | SIOS - an international partnership developing a sustained regional observing system for Arctic Earth System Science | *Inger Jennings (SIOS Knowledge Centre), Dariusz Ignatiuk (SIOS Knowledge Centre), Heikki Lihavainen (SIOS Knowledge Centre), Christiane Hubner (SIOS Knowledge Centre), Shridhar D. Jawak (SIOS Knowledge Centre), Øystein Godøy (SIOS Knowledge Centre & Norwegian Meteorological Institute) |  |
| Sp2 | Bringing the Svalbard science community together in times of global pandemic of COVID-19 | *Shridhar D. Jawak (Svalbard Integrated Arctic Earth Observing System), Veijo Pohjola (Svalbard Integrated Arctic Earth Observing System), Inger Jennings (Svalbard Integrated Arctic Earth Observing System), Christiane Hübner (Svalbard Integrated Arctic Earth Observing System), Dariusz Ignatiuk (Svalbard Integrated Arctic Earth Observing System), Øystein Godøy (Svalbard Integrated Arctic Earth Observing System & Norwegian Meteorological Institute), Heikki Lihavainen (Svalbard Integrated Arctic Earth Observing System), Bo N. Andersen (University of Oslo), Kim Homén (Norwegian Polar Institute) |  |
| Sp3 | GRENE Arctic Climate Change Research Project (2011-2016) | *Takashi Yamanouchi (NIPR & SOKENDAI) |  |
| Sp4 | Verification of the use of Google Cloud Platform by calculating a real-time forecast model | *Takeshi Terui (NIPR), Yasushi Fujiwara (The University of Tokyo), Takehiko Nose (The University of Tokyo) |  |
| Sp5 | Studies on variations of atmospheric greenhouse gases in the ArCS project 2015-2019 | *Shinji Morimoto (Tohoku University), Daisuke Goto (NIPR), Shohei Murayama (National Institute of Advanced Industrial Science and Technology), Ryo Fujita (Meteorological Research Institute), Yasunori Tohijima (National Institute for Environmental Studies), Shigeyuki Ishidoya (National Institute of Advanced Industrial Science and Technology), Toshinobu Machida (National Institute for Environmental Studies), Kazuhiro Tsuboi (Meteorological Research Institute), Yoichi Inai (Japan Meteorological Agency), Prabir K. Patra (Japan Agency for Marine-Earth Science and Technology), Shamil Maksyutov (National Institute for Environmental Studies), Akihiko Ito (National Institute for Environmental Studies), Shuji Aoki (Tohoku University) |  |
| Sp6 | Influence of Springtime Okhotsk High on Rapid Discharge Increase Accompanied by River Ice Melt in Eastern Siberia | *Kazuhiro Oshima (Aomori University), Hotaek Park (JAMSTEC), Masatake E. Hori (The University of Tokyo), Yasuhiro Yoshikawa (Kitami Institute of Technology) |  |
| Sp7 | Modeling of soil moisture dynamics in a larch forest in eastern Siberia | *Taro Nakai (National Taiwan University & University of Alaska Fairbanks), Tetsuya Hiyama (Nagoya University) |  |
| | Cross-comparison of NDVI time series among three | *Hirohiko Nagano (Nagoya University), Kazuhito Ichii (Chiba University), Hiroki Mizuochi | |

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|------|--|---|---|
| Sp8 | different satellite sensors for two different larch forests in eastern Siberia | (AIST), Ayumi Kotani (Nagoya University), Tetsuya Hiyama (Nagoya University) |  |
| Sp9 | Decadal scale variation of permafrost active layer thickness at larch forests in eastern Siberia | *Ayumi Kotani (Nagoya University), Taro Nakai (National Taiwan University), Tetsuya Hiyama (Nagoya University), Takeshi Yamazaki (Tohoku University), Takeshi Ohta (Nagoya University) |  |
| Sp10 | Spatial patterns and size-frequency distribution of thermokarst lakes in the middle basin of the Rena River | *Hitoshi Saito (Kanto Gakuin University), Yoshihiro Iijima (Mie University) |  |
| Sp11 | Changes in fungal diversity in Ward Hunt Lake, Canadian High Arctic | *Masaharu Tsuji (National Institute of Technology, Asahikawa College), Yukiko Tanabe (NIPR & SOKENDAI), Warwick F. Vincent (Université Laval), Masaki Uchida (NIPR & SOKENDAI) |  |
| Sp12 | Summary of the R/V Mirai Arctic Ocean cruise in 2020 | *Shigeto Nishino (JAMSTEC), Amane Fujiwara (JAMSTEC), Motoyo Itoh (JAMSTEC), Jonaotaro Onodera (JAMSTEC), Akihiko Murata (JAMSTEC), Takashi Kikuchi (JAMSTEC) |  |
| Sp13 | Tectonics, magmatism, and hydrothermalism in Arctic Ocean floor | *Masakazu Fujii (NIPR & SOKENDAI), Hiroshi Sato (Senshu University), Taichi Sato (The National Institute of Advanced Industrial Science and Technology), Yoshifumi Nogi (NIPR & SOKENDAI) |  |
| Sp14 | Area change of supraglacial lakes on Tracy and Heilprin Glaciers, northwestern Greenland | *Yefan Wang (Hokkaido University), Shin Sugiyama (Hokkaido University) |  |
| Sp15 | Estimation of Greenland surface mass balance using positive degree-days method and energy balance model | *Ryouta O'ishi (The University of Tokyo), Fuyuki Saito (JAMSTEC), Ayako Abe-Ouchi (The University of Tokyo, JAMSTEC, NIPR), Takashi Obase (The University of Tokyo) |  |
| Sp16 | Temporal and spatial variabilities in recent surface mass balance at EGRIP, Greenland | *Yuki Komuro (NIPR), Fumio Nakazawa (NIPR & SOKENDAI), Naoko Nagatsuka (NIPR), Motohiro Hirabayashi (NIPR), Wataru Shigeyama (NIPR & SOKENDAI), Sumito Matoba (Hokkaido University), Tomoyuki Homma (Nagaoka University of Technology), Kumiko Goto-Azuma (NIPR & SOKENDAI) |  |
| Sp17 | ArCS II Cryosphere research-3 "Water and material circulations between snow-and-ice and atmosphere in seasonal sea ice regions and their impact on environment in the Arctic | *Sumito Matoba (Hokkaido University), Yoshinori Iizuka (Hokkaido University), Yuzo Miyazaki (Hokkaido University), Toshitaka Suzuki (Yamagata University), Shohei Hattori (Tokyo Institute of Technology), Ryu Uemura (Nagoya University), Keiichiro Hara (Fukuoka University), Naga Oshima (Meteorological Research Institute), Tetsuhide Yamasaki (Avangnaq), Teruo Aoki (Meteorological Research Institute & NIPR) |  |
| Sp18 | Breathability and Thermal Insulation Performance of an Arctic Fox Fur used for Clothing in North Greenland | *Ryo Kusaka (Hokkaido University), Shin Sugiyama (Hokkaido University), Aki Harada (Natural Energy Research Association in Hokkaido) |  |

Special session

Interdisciplinary sessions

Ordinary sessions

Time Table

[Oral session](#) | [Poster session](#)

[OA] Antarctic meteorites











Scopes




This session is hold to present rexent research outcomes for Antarctic meteorites and micrometeorites.

Conveners : Naoya Imae (NIPR)

Real-time Oral presentations (09:25 – 11:45, 13:30 – 14:50)

Date: Thu. 3 December

| Chair: Naoki Shirai (Tokyo Metropolitan University), Akira Yamaguchi (NIPR) | | | |
|---|---------------|--|--|
| | 9:25 - 9:30 | Opening | Akira Yamaguchi (NIPR), Naoya Imae (NIPR) |
| OAo1 | 9:30 - 9:45 | Benford's Law as Applied to Ordinary-Chondrite Mass Distributions Among Observed Falls, NWA Finds and Antarctic Finds | *Alan E. Rubin (UCLA)  |
| OAo2 | 9:45 - 10:00 | Direct Analysis of Early Solar System Aqueous Fluids by TOF-SIMS | *Michael Zolensky (ARES, NASA JSC), Robert Bodnar (Virginia Tech), Andrei Dolocan (University of Texas), Hector Lamadrid (University of Missouri), Yoko Kebukawa (Yokohama National University), E. Sendula (Virginia Tech), Queenie H.-S. Chan (University of London), Zia Rahman (Jacobs JETS)  |
| OAo3 | 10:00 - 10:15 | Oxygen isotope variation in CV and CR dark inclusions and chondrules: Evidence for a possible genetic relationship between CV3 dark inclusions and CM chondrites | *Richard C. Greenwood (The Open University), Michael E. Zolensky (ARES, Johnson Space Center), Paul C. Buchanan (Kilgore College), Ian A. Franchi (The Open University)  |
| OAo4 | 10:15 - 10:30 | Abundant extraterrestrial amino acids in the primitive CM carbonaceous chondrite Asuka 12236 | *Daniel P. Glavin (NASA Goddard Space Flight Center), Hannah L. McLain (Catholic University of America), Jason P. Dworkin (NASA Goddard Space Flight Center), Eric T. Parker (NASA Goddard Space Flight Center), Jamie E. Elsila (NASA Goddard Space Flight Center), José C. Aponte (Catholic University of America), Danielle N. Simkus (USRA), Chad I. Pozarycki (Southeastern Universities Research Association), Heather V. Graham (Catholic University of America), Larry R. Nittler (Earth and Planets Laboratory, Carnegie Institution of Washington), Conel M.O'D Alexander (Earth and Planets Laboratory, Carnegie Institution of Washington)  |
| OAo5 | 10:30 - 10:45 | The high abundances of presolar grains found in the most primitive CM meteorite, Asuka 12169 | *Yuchen Xu (National Space Science Center, Chinese Academy of Sciences), Yangting Lin (Institute of Geology and Geophysics, Chinese Academy of Sciences), Jialong Hao (Institute of Geology and Geophysics, Chinese Academy of Sciences), Makoto Kimura (NIPR)  |
| OAo6 | 10:45 - 11:00 | Pristine nature and formation environments of chondrules from Asuka 12236 CM2.9 chondrite: Evidence from mineral chemistry and oxygen isotope systematics | *Kohei Fukuda (University of Wisconsin-Madison), Makoto Kimura (NIPR), Noriko T. Kita (University of Wisconsin-Madison)  |
| Chair: Atsushi Takenouchi (NIPR), Naoya Imae (NIPR) | | | |
| OAo7 | 11:00 - 11:15 | Extremely heterogeneous oxygen isotopes in an Al-rich chondrule from Yamato 81020 (CO3.05) | *Noriko T. Kita (University of Wisconsin-Madison), Mingming Zhang (University of Wisconsin-Madison), Kohei Fukuda (University of Wisconsin-Madison), Makoto Kimura (NIPR)  |
| OAo8 | 11:15 - 11:30 | Oxygen isotope systematics of chondrules and olivine fragments from Tagish Lake C2 chondrite | *Takayuki Ushikubo (Kochi Institute, JAMSTEC), Makoto Kimura (NIPR)  |
| OAo9 | 11:30 - 11:45 | The BELARE 2019-2020 meteorite recovery expedition on the Nansen Ice Field, East Antarctica | *Naoki Shirai (Tokyo Metropolitan University), Steven Goderis (Vrije Universiteit Brussel), Mehmet Yesiltas (Kirkklareli University), Hamed Pourkhorsandi (Université Libre de Bruxelles), Manu Poudelet (International Polar Foundation), Martin Leitl (International Polar Foundation), Akira Yamaguchi (NIPR), Vinciane Debaille (Université Libre de Bruxelles), Philippe Claeys (Vrije Universiteit Brussel)  |
| Lunch | | | |
| Chair: Atsushi Takenouchi (NIPR), Naoya Imae (NIPR) | | | |
| OAo10 | 13:30 - 13:45 | Olivine xenocrysts and cooling rates of quenched angrites: Implications for the stratigraphy of their igneous body | *Hideyuki Hayashi (The University of Tokyo), Takashi Mikouchi (The University of Tokyo), Akira Yamaguchi (NIPR)  |
| | | ⁴⁰ Ar/ ³⁹ Ar geochronology of unbrecciated vesicular | |

| | | | | |
|-------|---------------|--|---|---|
| OAo11 | 13:45 - 14:00 | eucrites PCA 82502 and PCA 91007 ⁴⁰ Ar/ ³⁹ Ar geochronology of unbrecciated vesicular eucrites PCA 82502 and PCA 91007 | *Fred Jourdan (Curtin University), Lucy Foreman (Curtin University), Trudi Kennedy (Curtin University), Gretchen Benedix (Curtin University), Ela Eroglu (Curtin University), Celia Mayers (Curtin University) |  |
| OAo12 | 14:00 - 14:15 | Graphite-based geothermometry of Yamato 74123 ureilitic meteorite | *Anna Barbaro (University of Pavia), Febrizio Nestola (University of Padova & Goethe-University Frankfurt), Lidia Pittarello (National History Museum), Ludovic Ferrière (National History Museum), Mara Murri (University of Milano-Bicocca), Oliver Christ (University of Padova), Matteo Alvaro (University of Pavia), Chiara Domeneghetti (University of Pavia) |  |
| OAo13 | 14:15 - 14:30 | The discovery of Mn-precipitates in nakhlites Yamato 000802 | Ayaka Nakamura (Hiroshima University), *Masaaki Miyahara (Hiroshima University), Hiroki Suga (The University of Tokyo & JASRI), Akira Yamaguchi (NIPR), Daisuke Wakabayashi (KEK), Shohei Yamashita (KEK), Yasuo Takeichi (KEK), Yoshio Takahashi (The University of Tokyo), Eiji Ohtani (Tohoku University) |  |
| | 14:30-14:50 | Poster session (1-minute appeal) | | |

Poster presentations (16 November - 18 December)

| | | | |
|-------|---|---|---|
| OAp1 | Shock metamorphism and Ar-Ar ages of ordinary chondrites | *Atsushi Takenouchi (NIPR), Hirochika Sumino (The University of Tokyo), Akira Yamaguchi (NIPR) |  |
| OAp2 | Identification of primitive unequilibrated ordinary chondrites from four Antarctic dense collections areas (EET, GRO, LEW, and MET) | *Kevin Righter (ARES, NASA-JSC), John Schutt (Case Western Reserve University), Nicole Lunning (ARES, NASA-JSC), Ralph P. Harvey (Case Western Reserve University), Jim Karner (University of Utah) |  |
| OAp3 | Ordinary chondrites: nitrogen systematics | *Ramakant R. Mahajan (Physical Research Laboratory) |  |
| OAp4 | The oxygen isotopic and chemical composition of the primitive Asuka CM chondrites | *Makoto Kimura (NIPR), Richard C. Greenwood (The Open University), Jean-Alix Barrat (Université de Bretagne Occidentale), Naoya Imae (NIPR), Mutsumi Komatsu (SOKENDAI), Akira Yamaguchi (NIPR), Takaaki Noguchi (Kyushu University) |  |
| OAp5 | On the bulk mineralogical composition of carbonaceous chondrites in high-Mg/Si planetary systems | *Peter Futó (University of Debrecen) |  |
| OAp6 | Variations of CM chondrites evaluated from X-ray diffraction | *Naoya Imae (NIPR), Makoto Kimura (NIPR) |  |
| OAp7 | A potential impact melt clast in the Renazzo-like (CR) chondrite Pecora Escarpment (PCA) 91082? | *Jemma Davidson (Arizona State University), Devin L. Schrader (Arizona State University) |  |
| OAp8 | Evaluation of Raman Parameters of Organic Matter: The Comparative Study for Thermal Records in Carbonaceous Chondrites. | *Mutsumi Komatsu (SOKENDAI & Waseda University), Timothy J. Fagan (Waseda University), Akira Yamaguchi (NIPR) |  |
| OAp9 | The Fe/S ratio of pyrrhotite group sulfides in chondrites: An indicator of oxidation | *Devin L. Schrader (Arizona State University), Jemma Davidson (Arizona State University), Timothy J. McCoy (National Museum of Natural History, Smithsonian Institution), Thomas J. Zega (University of Arizona), Sara S. Russell (Natural History Museum), Kenneth J. Domanik (University of Arizona), Ashley J. King (Natural History Museum) |  |
| OAp10 | Collection of Antarctic micrometeorites using the freeze-drying method of snow | *Takahito Tominaga (Kyushu University), Takaaki Noguchi (Kyushu University), Yoshimori Toui (Kyushu University), Akira Yamaguchi (NIPR) |  |
| OAp11 | Bulk analysis of a small fragment of the Hayabusa2 returned sample: A plan proposed by Phase2 Kochi | *Motoo Ito (JAMSTEC Kochi), Akira Yamaguchi (NIPR), Naoya Imae (NIPR), Makoto Kimura (NIPR), Naoki Shirai (Tokyo Met. Univ.), Naotaka Tomioka (JAMSTEC Kochi), Masayuki Uesugi (JASRI/SPRING-8), Kentaro Uesugi (JASRI/SPRING-8), Takuji Ohigashi (UVSOR/IMS), Yuzuru Karouji (JAXA), Yu Kodama (MWJ), Hayato Yuzawa (UVSOR/IMS), Kaori Hirahara (Osaka Univ.), Ikuya Sakurai (Nagoya Univ.), Ikuo Okada (Nagoya Univ.), Toru Yada (JAXA), Masanao Abe (JAXA) |  |
| OAp12 | Volatile loss from mesosiderites | *Naoki Sugiura (Chiba University of Technology), T. Arai (Chiba Institute of Technology) |  |
| OAp13 | Shock and thermal history of ureilites and implications of Zn depletion | *Akira Yamaguchi (NIPR), Jean-Alix Barrat (UBO, IUEM), Naoki Shirai (Tokyo Metropolitan University) |  |

Special session

Interdisciplinary sessions

Ordinary sessions

Time Table

[Oral session](#) | [Poster session](#)

[OB] Polar Biology

Scopes

This session covers the following research topics.










Polar Marine Ecosystems -from biogeochemistry to apex predators

Polar Terrestrial Ecosystem -diversity and biological response

Conveners : **Ryosuke Makabe (NIPR)**

















Real-time Oral presentations (10:00 – 11:30, 13:00 – 14:30, 14:45 – 16:45)

Date: Wed. 2 December





| Chair: Masayoshi Sano (NIPR) | | | |
|---------------------------------|---------------|--|---|
| OBo1 | 10:00 - 10:30 | Biological nitrogen fixation detected under Antarctic sea ice | *Takuhei Shiozaki (The University of Tokyo & JAMSTEC), Amane Fujiwara (JAMSTEC), Keisuke Inomura (University of Washington), Yuu Hirose (Toyohashi University of Technology), Fuminoro Hashihama (Tokyo University of Marine Science and Technology), Naomi Harada (JAMSTEC)  |
| OBo2 | 10:30 - 11:00 | Differences in diversity and photoprotection capability between Ice algae and under-ice phytoplankton in Saroma-Ko Lagoon, Japan: a comparative taxonomic diatom analysis with microscopy and DNA barcoding | *Kazuhiro Yoshida (Hokkaido University & University of Tasmania & Saga University), Hiroshi Hattori (Tokai University), Takenobu Toyota (Hokkaido University), Andrew McMinn (University of Tasmania), Koji Suzuki (Hokkaido University)  |
| OBo3 | 11:00 - 11:30 | Algal concentration and composition in newly formed/young sea ice in Antarctic | *Keigo D. Takahashi (SOKENDAI), Masato Ito (JAMSTEC), Ryosuke Makabe (SOKENDAI & NIPR & TUMSAT), Takeshi Tamura (NIPR & SOKENDAI), Tsuneo Odate (NIPR & SOKENDAI), Masato Moteki (TUMSAT & NIPR)  |
| Lunch | | | |
| Chair: Akinori Takahashi (NIPR) | | | |
| OBo4 | 13:00 - 13:30 | Foraging ecology of Baikal seals in Lake Baikal | *Yuuki Watanabe (NIPR), Eugene Baranov (Baikal Seal Aquarium), Nobuyuki Miyazaki (The University of Tokyo)  |
| OBo5 | 13:30 - 14:00 | Environmental factors affecting foraging habitat and behaviour of Adélie penguins throughout the breeding season | *Nobuo Kokubun (NIPR), Louise Emmerson (AAD), Julie McInnes (AAD), Barbara Wienecke (AAD), Colin Southwell (AAD)  |
| OBo6 | 14:00 - 14:30 | Foraging movements and prey of short-tailed shearwaters in the Southern Ocean | *Sarara Azumi (Hokkaido University), Yutaka Watanuki (Hokkaido University), Akinori Takahashi (NIPR), Nobuo Kokubun (NIPR), Yasuhiro Ando (Hokkaido University), Masato Moteki (TUMSAT), Fernando Arce (University of Tasmania), Olivia Dove (University of Tasmania), Mary-Anne Lea (University of Tasmania), Mark Hindell (University of Tasmania)  |
| | 14:30 - 14:45 | Break | |
| Chair: Satoshi Imura (NIPR) | | | |
| OBo7 | 14:45 - 15:15 | Biodiversity of cyanobacteria and microalgae in freshwater and terrestrial habitats, Eastern Dronning Maud Land, Lützow-Holm Bay, Antarctica; Does cyanobacterial support development of lake bottom communities by nitrogen fixation, and Construction of photosynthetic microorganisms diversity database (60 Japan Antarctic Research Expedition - 2018/2019) | *Josef Elster (University of South Bohemia & Phycology Centre), Tomotake Wada (SOKENDAI), Hiroshi Koyama (SOKENDAI), Sakae Kudoh (NIPR & SOKENDAI), Satoshi Imura (NIPR & SOKENDAI), Jana Křiváková (University of South Bohemia & Phycology Centre), Miloslav Šimek (Ghent University & University of South Bohemia), Elie Verleyen (University of Liège), Annick Wilmette (University of South Bohemia)  |
| OBo8 | 15:15 - 15:45 | A deep amplicon sequencing study of the algal communities in lacustrine and hydro-terrestrial environments of Antarctica | *Yuu Hirose (Toyohashi University of Technology), Takuhei Shiozaki (The University of Tokyo), Masahiro Otani (Niigata University), Itsuki Hamano (Osaka Prefecture University), Shizue Yoshihara (Osaka Prefecture University), Hayato Tokumoto (Osaka Prefecture University), Sakae Kudoh (NIPR & SOKENDAI), Satoshi Imura (NIPR & SOKENDAI), Toshihiko Eki (Toyohashi University of Technology), Naomi Harada (JAMSTEC)  |
| OBo9 | 15:45 - 16:15 | Chasing Legionella spp. in Antarctic human-made and natural environments | *Sho Shimada (Toho University School of Medicine & Tokyo Medical and Dental University), Ryosuke Nakai (Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)), Kotaro Aoki (Toho University School of Medicine), Norifumi Shimoeda (Tochigi Medical Center, Tochinoki Hospital), Giichiro Ohno (Tokatsu Hospital), Sakae Kudoh (NIPR & SOKENDAI), Satoshi Imura (NIPR & SOKENDAI), Kentaro Watanabe (NIPR), Yasunari Miyazaki (Tokyo Medical  |

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| | | | and Dental University), Yoshikazu Ishii (Toho University School of Medicine), Kazuhiro Tateda (Toho University School of Medicine) | |
| OBo10 | 16:15 - 16:45 | Diatoms define a novel freshwater biogeography of the Antarctic | *Elie Verleyen (Ghent University), Bart Van de Vijver (Meise Botanic Garden & University of Antwerp), Bjorn Tytgat (Ghent University), Eveline Pinseel (Ghent University & Meise Botanic Garden), Dominic A. Hodgson (British Antarctic Survey), Kateřina Kopalová (Charles University), Steven L. Chown (Monash University), Eric Van Ranst (Ghent University), Satoshi Imura (NIPR & SOKENDAI), Sakae Kudoh (NIPR & SOKENDAI), Wim Van Nieuwenhuyze (Ghent University), Koen Sabbe (Ghent University), Wim Vyverman (Ghent University) |  |

Poster presentations (16 November - 18 December)

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| OBp1 | Molecular analysis of fecal pellets collected by using gel sediment traps in the Indian sector of the Southern Ocean during austral summer | *Masayoshi Sano (NIPR), Ryosuke Makabe (NIPR & TUMSAT & SOKENDAI), Norio Kurosawa (Soka University), Masato Moteki (NIPR & TUMSAT), Tsuneo Odate (NIPR & SOKENDAI) |  |
| OBp2 | Microscopic and DNA-based diet analyses of larval Antarctic myctophid fish <i>Electrona antarctica</i> in the Southern Ocean | *Satoshi Nirazuka (Tokyo University of Marine Science and Technology), Aiko Tachibana (Tokyo University of Marine Science and Technology), Masato Moteki (Tokyo University of Marine Science and Technology & NIPR) |  |
| OBp3 | Seasonal variation in physical and biological parameters during sea ice melting season in the Southern Ocean | *Ryosuke Makabe (NIPR & SOKENDAI), Keigo D. Takahashi (SOKENDAI), Shintaro Takao (National Institute for Environmental Studies), Ryo Matsuda (Soka University), Kohei Mizobata (TUMSAT), Norio Kurosawa (Soka University), Masato Moteki (TUMSAT & NIPR), Tsuneo Odate (NIPR & SOKENDAI) |  |
| OBp4 | Cold tolerance of phytoplankton living in rivers, ponds and lakes | *Erina Yoshida (Kyoto University of Advanced Science), Nobue Takasawa Kasamatsu (Kyoto University of Advanced Science), Asami Fujisawa (Kyoto University of Advanced Science), Kaname Tamagawa (Kyoto University of Advanced Science), Ryosuke Makabe (NIPR), Tsuneo Odate (NIPR) |  |
| OBp5 | Role of fecal pellet-like dinoflagellates in the carbon transport and food webs in the seasonal ice zone of the Southern Ocean | *Jaekyeng Han (Soka University), Ayuko Kagesawa (SOKENDAI), Masayoshi Sano (NIPR), Shintaro Takao (National Institute for Environmental Studies), Ryosuke Makabe (NIPR & SOKENDAI & TUMSAT), Masato Moteki (NIPR & TUMSAT), Tsuneo Odate (NIPR & SOKENDAI), Norio Kurosawa (Soka University) |  |
| OBp6 | Environmental DNA as a tool for biomonitoring the Antarctic marine ecosystem | *Aiko Tachibana (TUMSAT), Ryosuke Makabe (NIPR & TUMSAT), Masato Moteki (TUMSAT & NIPR) |  |
| OBp7 | Species-specific distribution of euphausiids in the waters surrounding Hokkaido, northeastern Japan during May and June 2019 | *Yoshizumi Nakagawa (TUA), Tomoki Shimizu (TUA), Yukiko Taniuchi (JFREA), Hiromi Kasai (JFREA), Yasuto Nishino (TUA) |  |
| OBp8 | The learning material set of marine plankton: Resin-embedded specimens, image and video for the promotion of marine education | *Hisae Sakurai (NIPR), Masayoshi Sano (NIPR), Kunio T. Takahashi (NIPR & SOKENDAI), Ryosuke Makabe (NIPR & SOKENDAI & TUMSAT), Tsuneo Odate (NIPR & SOKENDAI) |  |
| OBp9 | Photosynthetic strategies of an ice diatom to low Fe availability as estimated through ice tank experiments with 77 K chlorophyll fluorometry | *Kazuhiro Yoshida (Hokkaido University & University of Tasmania & Saga University), Ondřej Prášil (The Czech Academy of Science), Andrew McMinn (University of Tasmania), Koji Suzuki (Hokkaido University) |  |
| OBp10 | Report on the status and trends of Southern Ocean Zooplankton based on the SCAR Southern Ocean Continuous Plankton Recorder (SO-CPR) Survey | *Kunio T. Takahashi (NIPR & SOKENDAI), John A. Kitchener (AAD), Karen V. Robinson (NIWA), Graham W. Hosie (SAHFOS), and SO-CPR Survey Team |  |
| OBp11 | Short-tailed shearwaters fly and navigate efficiently under strong winds over Southern Ocean | *Akinori Takahashi (NIPR), Sarara Azumi (Hokkaido University), Yutaka Watanuki (Hokkaido University), Nobuo Kokubun (NIPR), Fernando Arce (University of Tasmania), Mary-Anne Lea (University of Tasmania), Mark Hindell (University of Tasmania) |  |
| OBp12 | Walking behavior of the Antarctic tardigrade, <i>Acutuncus antarcticus</i> | *Kurumi Yoshimura (Keio University SFC), Megumu Tsujimoto (Keio University SFC) |  |
| OBp13 | Mapping marine debris encountered by albatrosses tracked across oceanic waters | *Bungo Nishizawa (NIPR), Jean-Baptiste Thiebot (NIPR), Fumio Sato (Yamashina Institute for Ornithology), Naoki Tomita (Yamashina Institute for Ornithology), Ken Yoda (Nagoya University), Rei Yamashita (Tokyo University of Agriculture and Technology), Hideshige Takada (Tokyo University of Agriculture and Technology), Yutaka Watanuki (Hokkaido University) |  |
| OBp14 | Three-dimensional positioning during underwater group behaviour of Adélie penguins | *Junichi Takagi (NIPR), Akinori Takahashi (NIPR & SOKENDAI), Hina Watanabe (SOKENDAI), Kotaro Ichikawa (Kyoto University), Hideaki Nishizawa (Kyoto University), Seki Asai (Tokyo University of Marine Science and Technology), Yoshinori Miyamoto (Tokyo University of Marine Science and Technology), Hiromichi Mitamura (Kyoto University), Nobuaki Arai (National Fisheries University) |  |
| OBp15 | Estimating daily energy gain of lactating Weddell seals using animal-borne video and accelerometers | *Takashi Iwata (Ocean Policy Research Institute & The University of Tokyo), Kim Goetz (Alaska Fisheries Science Center), Rachel Holser (University of California), Sarah Michael (Massey University), Matt Pinkerton (National Institute of Water and Atmospheric Research), Akinori Takahashi (NIPR), Kagari Aoki (The University of Tokyo), Rose Foster (University of Canterbury), Katsufumi Sato (The University of Tokyo) |  |
| OBp16 | Scaling of dive duration among water birds with contrasted swimming modes | *Hiroya Matsushita (SOKENDAI), Yuuki Watanabe (NIPR & SOKENDAI) |  |

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| OBp17 | Culturally important seabirds distribute beyond the recently established shipping avoidance area around St. Lawrence Is., northern Bering Sea | *Jean-Baptiste Thiebot (NIPR), Alexis Will (NIPR & University of Alaska Fairbanks), Akinori Takahashi (NIPR), Alexander Kitaysky (University of Alaska Fairbanks) |  |
| OBp18 | Food of short-tailed shearwaters died in a collision in the Southern Ocean | *Sarara Azumi (Hokkaido University), Akinori Takahashi (NIPR), Jumpei Okado (Hokkaido University), Yasuaki Niizuma (Meijo University), Yutaka Watanuki (Hokkaido University) |  |
| OBp19 | Ice alga, <i>Detonula confervacea</i> , changes its cell and colony size depending on the vertical position of sea ice in Saroma-ko lagoon | *Kyoko Kawanobe (Kanagawa University), Kosuke Aratani (Kanagawa University), Shunsuke Sakai (Kanagawa University), Kazuki Hoshi (Kanagawa University), Sakae Kudoh (NIPR), Yoshihiro Suzuki (Kanagawa University) |  |
| OBp20 | Mercury concentration in soil observed around Syowa station, Antarctica | *Koyomi Nakazawa (Fukuoka Institute of technology), Osamu Nagafuchi (Fukuoka Institute of technology), Megumu Tsujimoto (Keio University), Koji Kanefuji (Institute of Statistical mathematics), Satoshi Imura (NIPR) |  |
| OBp21 | Analysis of bacterial microbiota associated with <i>Umbilicaria</i> spp. lichens in polar regions | *Zichen He (Hiroshima University), Martin W. Hahn (University of Innsbruck), Takeshi Naganuma (Hiroshima University) |  |
| OBp22 | Characterization of carbazole degrading bacteria from Antarctic soil | *Tatsuya Niwano (Shibaura Institute of Technology), Siti Aqlima Ahmad (Universiti Putra Malaysia), Azham Zulkharnain (Shibaura Institute of Technology) |  |
| OBp23 | Heterocyclic compounds degradation of newly isolated Antarctic soil bacteria | *Seiryu Take (Shibaura Institute of Technology), Siti Aqlima Ahmad (Universiti Putra Malaysia), Azham Zulkharnain (Shibaura Institute of Technology) |  |
| OBp24 | Thermal germination characteristics of High Arctic plants: implications for their responses to climate warming | *Soshi Osaki (Hiroshima University), Takayuki Nakatsubo (Hiroshima University), Masaki Uchida (NIPR) |  |
| OBp25 | Identification of genes involved in biosurfactant production from Antarctic soil bacteria | *Azham Zulkharnain (Shibaura Institute of Technology), Siti Aqlima Ahmad (Universiti Putra Malaysia) |  |
| OBp26 | Diversity of bdelloid rotifer in wetland and lakes of Sōya Coast, East Antarctica | *Tomotake Wada (SOKENDAI), Sakae Kudoh (NIPR & SOKENDAI) |  |
| OBp27 | Population changes of <i>Globisporangium</i> spp. in a Sanionia moss colony in Ny-Ålesund and their infection to Sanionia moss in an in vitro test | *Natsumi Fujii (Osaka Prefecture University), Motoaki Tojo (Osaka Prefecture University) |  |
| OBp28 | Bacterial diversity and function in the soil at Canadian Arctic | *Masaki Uchida (NIPR & SOKENDAI), Shu Kuan Wong (NIPR), Ryo Kaneko (Bioinsight Co., Ltd.) |  |
| OBp29 | Microfungi associated with <i>Salix</i> spp. in Arctic and Antarctic tundra | *Takashi Osono (Doshisha University), Satoru Hobara (Rakuno Gakuen University), Dai Horose (Nihon University), Msakai Ushida (NIPR) |  |
| OBp30 | Diversity of benthic microbial mats in five lakes on Sōya Coast ice-free areas, East Antarctica | *Hiroshi Koyama (SOKENDAI), Tomotake Wada (SOKENDAI), Sakae Kudoh (NIPR & SOKENDAI), Satoshi Imura (NIPR & SOKENDAI), Jana Kvidrová (University of South Bohemia & Phycology Centre), Miloslav Šimek (University of South Bohemia & Biology Centre AS CR), Elie Verleyen (Ghent University), Annick Wilmotte (University of Liege), Josef Elster (University of South Bohemia & Phycology Centre) |  |
| OBp31 | Statistical optimisation of diesel degradation with bacterial consortium | *Rasidnie Razin Wong (Universiti Putra Malaysia), Azham Zulkharnain (Shibaura Institute of Technology), Claudio Gomez-Fuentes (Universidad de Magallanes), Nancy Calisto-Ulloa (Universidad de Magallanes), Peter Convey (British Antarctic Survey), Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre) |  |
| OBp32 | Effects of Heavy Metals on Antarctic Bacterial Community Growth Kinetics in Degrading Waste Canola Oil | *Khadijah Nabilah Mohd Zahri (Universiti Putra Malaysia), Suriana Sabri (Universiti Putra Malaysia), Azham Zulkharnain (Shibaura Institute of Technology), Claudio Gomez-Fuentes (Universidad de Magallanes), Nancy Calisto-Ulloa (Universidad de Magallanes), Peter Convey (British Antarctic Survey), Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre) |  |
| OBp33 | Biodegradation of phenol and diesel by cold-adapted <i>Arthrobacter</i> sp. strain AQ5-05 isolated from Antarctic soil | *Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre), Gillian Li Yin Lee (Universiti Putra Malaysia), Azham Zulkharnain (Shibaura Institute of Technology), Peter Convey (British Antarctic Survey), Siti Aisyah Alias (National Antarctic Research Centre), Gerardo González-Rocha (Universidad de Concepcion) |  |
| OBp34 | Adaptation strategy of aerial green alga, <i>Prasiola crispa</i> growing in Antarctica | *Makiko Kosugi (Astro Biology Center), Fumino Maruo (Chuo University), Norio Kurosawa (Soka University), Akinori Kawamata (Ehime Prefectural Science Museum), Yasuhiro Kamei (National Institute for Basic Biology), Yasuhiro Kashino (University of Hyogo), Hiroyuki Koike (Chuo University), Sakae Kudoh (NIPR), Satoshi Imura (NIPR) |  |
| OBp35 | Identification of Molybdenum-Reducing Psychrotolerant Marine Bacteria Isolated from Bernardo O'Higgins Riquelme Base Station, Antarctica. | *Syazani Darham (Universiti Putra Malaysia), Azham Zulkharnain (Universidad de Magallanes), Claudio Gomez-Fuentes (Shibaura Institute of Technology), Suriana Sabri (Universiti Putra Malaysia), Nancy Callisto-Ulloa (Shibaura Institute of Technology), Peter Convey (British Antarctic Survey), Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre) |  |
| OBp36 | Optimisation of Phenol Degradation of Antarctic Bacteria Consortium | *Tengku Athirrah Tengku-Mazuki (Universiti Putra Malaysia), Noor Azmi Shaharuddin (Universiti Putra Malaysia), Peter Convey (British Antarctic Survey), Azham Zulkharnain (Shibaura Institute of Technology), Claudio Gomez-Fuentes (Universidad de Magallanes), Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre) |  |
| OBp37 | Phytoremediation of Diesel Contaminant using Antarctic Fresh Water Algae | *Zheng-Syuen Lim (Universiti Putra Malaysia), Chiew-Yen Wong (International Medical University), Azham Zulkharnain (Shibaura Institute of Technology), Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre) |  |

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| OBp38 | Growth Studies of Antarctic Filamentous Algae in Molybdenum | *Gayathiri Verasoundarapandian (University of Putra Malaysia), Chiew-Yen Wong (International Medical University), Azham Zulkharnain (Shibaura Institute of Technology), Aida Atiqah Mohd Noor (University of Putra Malaysia), Siti Aqlima Ahmad (University of Putra Malaysia & National Antarctic Research Centre) |  |
| OBp39 | Evaluation of the feasibility for biodegradation of phenol by Antarctic isolate at low temperature in the presence of heavy metals | *Kavilasni Subramaniam (Universiti Putra Malaysia), Noor Azmi Shaharuddin (Universiti Putra Malaysia), Azham Zulkharnain (Shibaura Institute of Technology), Khalilah Abdul Khalil (Universiti Teknologi MARA), Peter Convey (British Antarctic Survey), Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre) |  |
| OBp40 | Heavy Metal Inhibition towards Diesel Biodegradation by Antarctic Marine Bacteria | *Nur Nadhirah Zakaria (Universiti Putra Malaysia), Claudio Gomez-Fuentes (Universidad de Magallanes), Azham Zulkharnain (Shibaura Institute of Technology), Suriana Sabri (Universiti Putra Malaysia), Nancy Calisto-Ulloa (Universidad de Magallanes), Peter Convey (British Antarctic Survey), Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre) |  |
| OBp41 | Assessment of Soils Microbiota and Their Adaptation to Low-Temperature Degradation of Diesel Hydrocarbons in Antarctica | *Ahmad Fareez Ahmad Roslee (Universiti Putra Malaysia), Claudio Gomez-Fuentes (Universidad de Magallanes), Noor Azmi Shaharudin (Universiti Putra Malaysia), Azham Zulkharnain (Shibaura Institute of Technology), Nancy Calisto-Ulloa (Universidad de Magallanes), Peter Convey (British Antarctic Survey), Siti Aqlima Ahmad (Universiti Putra Malaysia & National Antarctic Research Centre) |  |

Special session

Interdisciplinary sessions

Ordinary sessions

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[OG] Polar Geosciences











Scopes

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















Conveners : Masakazu Fujii (NIPR)

Real-time Oral presentations (13:00 – 14:15, 14:30 – 17:00)

Date: Wed. 2 December

| Chair: Mami Takehara (NIPR) | | | |
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| OGo1 | 13:00 - 13:15 | Traces of fluid movement in the active lower crust of collision setting observed in the Sør Rondane Mountains, East Antarctica: A field survey report of JARE61 | *Tetsuo Kawakami (Kyoto University), Tatsuro Adachi (Kyushu University), Masaoki Uno (Tohoku University), Fumiko Higashino (Okayama University of Science), Noriyoshi Tsuchiya (Tohoku University)  |
| OGo2 | 13:15 - 13:30 | Petrological characteristics of granulite/amphibolite-facies "bleached" hydration zones caused by fluid infiltration along fractures at middle crustal conditions in the Sør Rondane Mountains, East Antarctica | *Masaoki Uno (Tohoku University), Tetsuo Kawakami (Kyoto University), Tatsuro Adachi (Kyushu University), Fumiko Higashino (Okayama University of Science), Noriyoshi Tsuchiya (Tohoku University)  |
| OGo3 | 13:30 - 13:45 | Multiple timings of garnet-forming high-grade metamorphism in the Sør Rondane Mountains, East Antarctica | *Fumiko Higashino (Kyoto University, Okayama University of Science), Tetsuo Kawakami (Kyoto University), Shuhei Sakata (Kyoto University, The University of Tokyo), Takafumi Hirata (Kyoto University, The University of Tokyo)  |
| OGo4 | 13:45 - 14:00 | Contrasting P-T records of the metamorphic rocks at the Oyayubi ridge of Brattnipene, Sør Rondane Mountains, East Antarctica. | *Tatsuro Adachi (Kyushu University), Tetsuo Kawakami (Kyoto University), Masaoki Uno (Tohoku University), Fumiko Higashino (Okayama University of Science), Noriyoshi Tsuchiya (Tohoku University)  |
| OGo5 | 14:00 - 14:15 | Fluid fluxes through the reaction zones and fractures in metamorphic rocks revealed by reactive-transport model coupled with phase equilibrium: Evidence from fluid-rock reaction zones, Sør Rondane Mountains, East Antarctica | *Mindaleva Diana (Tohoku University), Masaoki Uno (Tohoku University), Atsushi Okamoto (Tohoku University), Noriyoshi Tsuchiya (Tohoku University)  |
| | 14:15 - 14:30 | Break | |
| Chair: Yoshiya Irie (NIPR) | | | |
| OGo6 | 14:30 - 14:45 | Linking Tarim with North India in northern Gondwana due to final closure of the Proto-Tethys Ocean: Insights from provenance of early Paleozoic sedimentary rocks in the Altyn Tagh orogen | *Qian Liu (International Research Fellow of JSPS, The University of Tsukuba), Toshiaki Tsunogae (The University of Tsukuba, University of Johannesburg)  |
| OGo7 | 14:45- 15:00 | Field-based monitoring, assessment and forecast of the permafrost coast retreat along the Kara Sea | *Arata Kioka (Kyushu University, Universität Innsbruck), Vladislav S. Isaev (Lomonosov Moscow State University), Masakazu Fujii (NIPR, SOKENDAI), Takeshi Tsuji (Kyushu University, Kyoto University), Pavel I. Kotov (Lomonosov Moscow State University), Stanislav A. Ogorodov (Lomonosov Moscow State University, Russian Academy of Sciences), Osip Kokin (Lomonosov Moscow State University, N.N. Zudov State Oceanographic Institute), Michail Tsarapov (Lomonosov Moscow State University), Tatiana Mironova (Lomonosov Moscow State University)  |
| OGo8 | 15:00 - 15:15 | Sea-level reconstruction using GIA modeling and geological evidence at Lützw-Holm Bay during the past 50,000 years | *Takeshige Ishiwa (NIPR), Yusuke Suganuma (NIPR, SOKENDAI), Jun'ichi Okuno (NIPR, SOKENDAI), Yuki Tokuda (Tottori University of Environmental Studies), Takuya Itaki (GSJ, AIST), Satoshi Sasaki (Shimane University), Shintaro Yamasaki (Kyoto University)  |
| OGo9 | 15:15 - 15:30 | GRACE/GRACE-FO Observed Mass Change Patterns of Antarctica Extracted by ICA Method | *Tianyan Shi (SOKENDAI), Yoichi Fukuda (NIPR), Koichiro Doi (NIPR, SOKENDAI), Jun'ichi Okuno (NIPR, SOKENDAI)  |
| OGo10 | 15:30 - 15:45 | Effect of local snow mass distribution on geodetic observation at Syowa Station with UAV survey | *Akihisa Hattori (SOKENDAI), Yuichi Aoyama (NIPR, SOKENDAI), Koichiro Doi (NIPR, SOKENDAI), Jun'ichi Okuno (NIPR, SOKENDAI)  |
| | 15:45 - 16:00 | Break | |
| Chair: Masakazu Fujii (NIPR) | | | |
| | 16:00 - 16:45 | 3-min Poster Presentation (14 short talks of OGp1 – OGp14) | |
| | 16:45 - 17:00 | General discussion | |

Poster presentations (16 November - 18 December)

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| OGp1 | Deglaciation history of the East Antarctic Ice sheet revealed by exposure ages and marine sedimentary records in Lützow-Holm Bay, Dronning Maud Land | *Yusuke Suganuma (NIPR, SOKENDAI), Moto Kawamata (SOKENDAI), Yuki Haneda (GSJ, AIST), Takeshige Ishiwa (NIPR), Kota Katsuki (Shimane University), Takuya Itaki (GSJ, AIST), Osamu Seki (Hokkaido University), Masakazu Fujii (NIPR, SOKENDAI), Jun'ichi Okuno (NIPR, SOKENDAI) |  |
| OGp2 | Preliminary results of Japanese surveys on multibeam bathymetry off East Antarctica | *Masakazu Fujii (NIPR, SOKENDAI), Yoshifumi Nogi (NIPR, SOKENDAI) |  |
| OGp3 | Fluctuations in the Rotational Motion of the Antarctic Plate as Derived from Shipboard Three Component Magnetometers | *Takeshi Matsumoto (University of the Ryukyus), Takanori Ishihara (Chuo Kaihatsu Corporation), Yoshifumi Nogi (NIPR, SOKENDAI) |  |
| OGp4 | Crustal motion in Antarctica simulated by GIA modeling: implications for Holocene ice melting history and viscosity structure of the Earth's mantle | *Jun'ichi Okuno (NIPR, SOKENDAI), Akihisa Hattori (SOKENDAI), Yoshiya Irie (NIPR), Koichiro Doi (NIPR, SOKENDAI) |  |
| OGp5 | Collapse of the peripheral bulge around Antarctica inferred from GIA modeling | *Yoshiya Irie (NIPR), Jun'ichi Okuno (NIPR, SOKENDAI), Koichiro Doi (NIPR, SOKENDAI) |  |
| OGp6 | Effects of the extreme wet event on nitrogen availability and NDVI in larch forest of Eastern Siberia | *Aleksandr Nogovitsyn (Hokkaido University), Ruslan Shakhmatov (Hokkaido University), Tomoki Morozumi (Hokkaido University), Shunsuke Tei (Forestry and Forest Products Research Institute), Yumiko Miyamoto (Hokkaido University), Shin Nagai (JAMSTEC), Trofim Maximov (Siberian Branch of the Russian Academy of Sciences), Atsuko Sugimoto (Hokkaido University) |  |
| OGp7 | Cordierite megacrysts in felsic gneiss from Botunnuten in southern Lützow-Holm Complex, East Antarctica | *Sotaro Baba (University of the Ryukyu), Seira Ohshiro (University of the Ryukyu), Tomokazu Hokada (NIPR, SOKENDAI), Atsushi Kamei (Shimane University), Ippei Kitano (Kyushu University), Yoichi Motoyoshi (NIPR, SOKENDAI) |  |
| OGp8 | Non-silicate minerals in garnet-bearing mafic granulites from Skallevikshalsen in the Lützow-Holm Complex of East Antarctica | *Kazuki Takahashi (University of Tsukuba), Toshiaki Tsunogae (University of Tsukuba, University of Johannesburg) |  |
| OGp9 | Geologic nature and evolution of Western Rayner Complex, with reference to Point Widdows charnockite and its localized hydration process | *Tomokazu Hokada (NIPR, SOKENDAI), Sotaro Baba (University of the Ryukyu), Atsushi Kamei (Shimane University), Ippei Kitano (Kyushu University), Yoichi Motoyoshi (NIPR, SOKENDAI) |  |
| OGp10 | Implications for the East Antarctica - Sri Lanka - southern India geologic connections from the newly proposed geological subdivision of the Lützow-Holm Complex in East Antarctica | Daniel J. Dunkley (NIPR, Polish Academy of Sciences), *Tomokazu Hokada (NIPR, SOKENDAI), Kazuyuki Shiraishi (NIPR, SOKENDAI), Yoshikuni Hiroi (NIPR, Chiba University), Yoshifumi Nogi (NIPR, SOKENDAI), Yoichi Motoyoshi (NIPR, SOKENDAI) |  |
| OGp11 | The petrography of staurolite-bearing garnet-gedrite-biotite-chlorite gneiss from the northeastern part of Akebono Rock in the Lützow-Holm Complex, East Antarctica | *Ippei Kitano (Kyushu University), Tomokazu Hokada (NIPR, SOKENDAI), Sotaro Baba (University of the Ryukyu), Atsushi Kamei (Shimane University), Yoichi Motoyoshi (NIPR, SOKENDAI) |  |
| OGp12 | The first report of the occurrence and petrography of garnet-orthopyroxene granulite from Oku-iwa Rock in the Lützow-Holm Complex, East Antarctica | *Ippei Kitano (Kyushu University), Tsuyoshi Toyoshima (Niigata University), Masahiro Ishikawa (Yokohama National University), Takuma Katori (Niigata University, Fossa Magna Museum), Tomokazu Hokada (NIPR, SOKENDAI) |  |
| OGp13 | Geochemical study on charnockites in Rundvagshetta, Lützow-Holm Complex | *Atsushi Kamei (Shimane University), Hikari Awata (Shimane University), Tomokazu Hokada (NIPR, SOKENDAI), Sotaro Baba (University of the Ryukyu), Ippei Kitano (Kyushu University), Yoichi Motoyoshi (NIPR, SOKENDAI) |  |
| OGp14 | Fossil earthquake recorded by pseudotachylytes and two textural types of cataclasites from northern Langhovde in the Lützow-Holm Complex, East Antarctica | *Tsuyoshi Toyoshima (Niigata University), Ippei Kitano (Kyushu University), Masahiro Ishikawa (Yokohama National University), Takuma Katori (Niigata University), Tomokazu Hokada (NIPR, SOKENDAI) |  |

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[OM] Polar Meteorology and Glaciology













Scopes

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

Conveners : [Shuki Ushio \(NIPR\)](#)






















Real-time Oral presentations (09:30 – 12:00, 13:30 – 15:40)


















Date: Thu. 3 December

| Chair: Naohiko Hirasawa (NIPR), Haruhiko Kashiwase (NIPR) | | | |
|---|---------------|--|--|
| OMo1 | 09:30 - 09:50 | Application of tritium tracer technique to the precipitation between clear-sky and synoptic precipitation over the Antarctic plateau | *Naoyuki Kurita (ISEE, Nagoya University), Naohiko Hirasawa (NIPR), Hideaki Motoyama (NIPR), Fumio Nakazawa (NIPR), Naofumi Akata (Hiroasaki University), Stepan Poluianov (University of Oulu)  |
| OMo2 | 09:50 - 10:10 | Active Boreal Forest Fires and Warm Air Masses | *Hiroshi Hayasaka (Hokkaido University)  |
| | 10:10 - 10:20 | Break | |
| OMo3 | 10:20 - 10:40 | Mapping Lake Ice Thickness Distribution Using UAV in the Saroma-ko Lagoon | *Kohei Sato (Kitami Institute of Technology), Kazutaka Tateyama (Kitami Institute of Technology), Tasuya Watanabe (Kitami Institute of Technology)  |
| OMo4 | 10:40 - 11:00 | Measuring Deformed Sea Ice Area in Seasonal Ice Zones Using L-band SAR Images | *Takenobu Toyota (Hokkaido University), Junno Ishiyama (Toma Town Office), Noriaki Kimura (University of Tokyo)  |
| OMo5 | 11:00 - 11:20 | Melt pond biogeochemistry in central Arctic: first insights from MOSAiC campaign | *Daiki Nomura (Hokkaido University), Alison Webb (University of Warwick), Yuhong Li (Third Institute of Oceanography), Manuel Dall'osto (Institute of Marine Science), Katrin Schmidt (University of Plymouth), Elise Droste (University of East Anglia), Nikolai Kolabutin (Arctic and Antarctic Research Institute), Egor Shimanchuk (Arctic and Antarctic Research Institute), Jun Inoue (NIPR), Ellen Damm (Alfred Wegener Institute), Bruno Delille (University of Liege)  |
| OMo6 | 11:20 - 11:40 | Rapid progress of ocean acidification over the Southern Ocean | *Bofeng F. Li (Hokkaido University), Xianliang L. Pan (Hokkaido University), Yutaka W. Watanabe (Hokkaido University)  |
| OMo7 | 11:40 - 12:00 | Ice Shelf Melt Water Feedback to Melt Rate of Pine Island and Thwaites Glaciers | *Kofan Lu (JAMSTEC)  |
| Lunch | | | |
| Chair: Ikumi Oyabu (NIPR), Sakiko Ishino (NIPR) | | | |
| OMo8 | 13:30 - 13:50 | Analysis of solid microparticles and metal components contained in snow at EGRIP, Greenland | *Yuki Komuro (NIPR), Fumio Nakazawa (NIPR & SOKENDAI), Naoko Nagatsuka (NIPR), Motohiro Hirabayashi (NIPR), Wataru Shigeyama (NIPR & SOKENDAI), Sumito Matoba (Hokkaido University), Tomoyuki Homma (Nagaoka University of Technology), Kumiko Goro-Azuma (NIPR & SOKENDAI)  |
| OMo9 | 13:50 - 14:10 | Continuous flow analysis of iron oxide in a Greenland ice core using a modified single-particle soot photometer | *Kumiko Goto-Azuma (NIPR & SOKENDAI), Nobuhiro Moteki (University of Tokyo), Yoshimi Ogawa-Tsukagawa (NIPR), Kaori Fukuda (NIPR), Sho Ohata (Nagoya University), Atsushi Yoshida (University of Tokyo), Tatsuhiro Mori (Tokyo University of Science), Yutaka Kondo (NIPR), Makoto Koike (University of Tokyo), Motohiro Hirabayashi (NIPR), Remi Dallmayr (NIPR), Jun Ogata (NIPR), Kyotaro Kitamura (NIPR), Sumito Matoba (Hokkaido University), Teruo Aoki (NIPR)  |
| OMo10 | 14:10 - 14:30 | Impact of density and microstructure on bubble close-off in layered firn at a new site near Dome Fuji, East Antarctica | *Ryo Inoue (SOKENDAI), Shuji Fujita (NIPR & SOKENDAI), Kenji Kawamura (NIPR & SOKENDAI & JAMSTEC), Fumio Nakazawa (NIPR & SOKENDAI), Ikumi Oyabu (NIPR)  |
| | 14:30 - 14:40 | Break | |
| OMo11 | 14:40 - 15:00 | The effect of ultraviolet germicidal radiation on melted snow and ice samples for the inactivation of microorganisms | *Fumio Nakazawa (NIPR & SOKENDAI), Kumiko Goto-Azuma (NIPR & SOKENDAI)  |
| OMo12 | 15:00 - 15:20 | Long-term future projections for the Antarctic ice sheet with the model SICOPOLIS | *Christopher Chambers (Hokkaido University), Ralf Greve (Hokkaido University), Takashi Obase (University of Tokyo), Fuyuki Saito (Japan Agency for Marine-Earth Science and Technology), Kaho Harada (University of Tokyo), Ayako Abe-Ouchi (University of Tokyo)  |
| | | | *Ralf Greve (Hokkaido University), Christopher Chambers (Hokkaido University) |

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| OMo13 | 15:20 - 15:40 | Long-term future projections for the Greenland ice sheet with the model SICOPOLIS | University), Reinhard Calov (Potsdam Institute for Climate Impact Research) |  |
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Poster presentations (16 November - 18 December)

| | | | |
|-------|--|---|---|
| OMp1 | A model study of controlling factors for ultrafine particle concentrations in the Antarctic coastal region in summer | *Ryohei Haraguchi (Fukuoka University), Masahiko Hayashi (Fukuoka University), Naohiko Hirasawa (NIPR) |  |
| OMp2 | Characteristics of cloud fraction from whole-sky camera and ceilometer observations onboard R/V Shirase during JARE 61 | Makoto Kuji (Nara Women's University), *Sara Hirose (Nara Women's University), Naho Nakatsuji (Nara Women's University), Mana Takada (Nara Women's University), Sakiko Ishino (NIPR), Naohiko Hirasawa (NIPR), Rigen Shimada (Japan Aerospace Exploration Agency), Masahiro Hori (University of Toyama) |  |
| OMp3 | Cloud fractions estimated from satellite and shipboard observations | *Naho Nakatsuji (Nara Women's University), Sara Hirose (Nara Women's University), Nanao Yamada (Nara Women's University), Mana Takada (Nara Women's University), Makoto Kuji (Nara Women's University), Rigen Shimada (Japan Aerospace Exploration Agency), Masahiro Hori (University of Toyama) |  |
| OMp4 | Possible semi-circumglobal teleconnection along polar front jet over the Northern Hemisphere driven by deep convection over the Sahel | *Tomoe Nakanishi (Mie University), Yoshihiro Tachibana (Mie University), Yuta Ando (Mie University & Niigata University) |  |
| OMp5 | A hemispheric extreme cold winter in 2017/18 enhanced by the lowest extent of Chukchi sea ice | *Keisuke Ota (Mie University), Yoshihiro Tachibana (Mie University), Yuta Ando (Mie University & Niigata University) |  |
| OMp6 | Detection of a climatological short break in the Polar Night Jet in early winter and its relation to cooling over Siberia | *Yuta Ando (Mie University & Niigata University), Koji Yamazaki (Hokkaido University), Yoshihiro Tachibana (Mie University), Masayo Ogi (Hokkaido University), Jinro Ukita (Niigata University) |  |
| OMp7 | The stratospheric QBO affects Southern Ocean sea ice through the tropical convection in early austral winter | *Koji Yamazaki (Hokkaido University), Tetsu Nakamura (Hokkaido University) |  |
| OMp8 | A 25 years record of surface air temperature at Dome Fuji | *Shohei Morino (Nagoya University), Naoyuki Kurita (Nagoya University), Takao Kameda (Kitami Institute of Technology), Hideaki Motoyama (NIPR) |  |
| OMp9 | Impact of Tasman Sea temperature warming on Antarctic Peninsula warming | *Kazutoshi Sato (Kitami Institute of Technology), Jun Inoue (NIPR), Ian Simmonds (The University of Melbourne), Irina Rudeva (The University of Melbourne & Australian Bureau of Meteorology) |  |
| OMp10 | Clouds and radiation processes in regional climate models evaluated using observations over the ice-free Arctic Ocean | *Jun Inoue (NIPR), Kazutoshi Sato (Kitami Institute of Technology), and CORDEX Team |  |
| OMp11 | The version upgrade of the GCOM-C/SGLI Cryosphere products | *Rigen Shimada (JAXA & Meteorological Research Institute), Masahiro Hori (University of Toyama), Teruo Aoki (NIPR & Meteorological Research Institute), Tomonori Tanikawa (Meteorological Research Institute), Sumito Matoba (Hokkaido University), Masashi Niwano (Meteorological Research Institute), Knut Stamnes (Stevens Institute of Technology), Wei Li (Stevens Institute of Technology), Nan Chen (National Center for Atmospheric Research) |  |
| OMp12 | Long-term trends of regional snow cover extent in the Northern Hemisphere derived from polar-orbiting satellite optical sensors | *Masahiro Hori (University of Toyama), Masashi Niwano (Meteorological Research Institute), Rigen Shimada (Japan Aerospace Exploration Agency), Teruo Aoki (NIPR & Meteorological Research Institute) |  |
| OMp13 | Development and Application of a coupled ice-sheet/earth rebound model for Antarctic and Northern Hemisphere ice-sheets | *Fuyuki Saito (JAMSTEC), Jun'ichi Okuno (NIPR), Ayako Abe-Ouchi (AORI U.Tokyo) |  |
| OMp14 | Incorporation of grounding line parameterizations in the three-dimensional ice sheet model SICOPOLIS | *Takashi Obase (The University of Tokyo), Ayako Abe-Ouchi (The University of Tokyo & NIPR), Fuyuki Saito (JAMSTEC), Ralf Greve (Hokkaido University), Kaho Harada (The University of Tokyo) |  |
| OMp15 | Modeling of Antarctic ice sheet response to atmospheric and ocean warming and its relation to past and future warming | *Kaho Harada (The University of Tokyo), Ayako Abe-Ouchi (The University of Tokyo & NIPR), Takashi Obase (The University of Tokyo), Wing-Le Chan (The University of Tokyo), Fuyuki Saito (Japan Agency for Marine-Earth Science and Technology), Ralf Greve (Hokkaido University) |  |
| OMp16 | Basal topography in the Dome Fuji region derived from the ground-based radar survey | *Shun Tsutaki (NIPR), Shuji Fujita (NIPR & SOKENDAI), Kenji Kawamura (NIPR & SOKENDAI & JAMSTEC), Ayako Abe-Ouchi (The University of Tokyo & NIPR), Kotaro Fukui (Tateyama Caldera Sabo Museum) |  |
| OMp17 | On the choice of antennas for observation of bedrock topography below the ice sheet | *Shuji Fujita (NIPR & SOKENDAI), Shun Tsutaki (NIPR), Kenji Kawamura (NIPR & SOKENDAI & JAMSTEC), Ayako Abe-Ouchi (The University of Tokyo & NIPR), Kotaro Fukui (Tateyama Caldera Sabo Museum) |  |
| OMp18 | Crystal orientation fabric development of Dome Fuji ice core inferred from dielectric permittivity tensor measurement | *Tomotaka Saruya (NIPR), Shuji Fujita (NIPR & SOKENDAI) |  |
| OMp19 | Modeling elastic stress of Langhovde Glacier in East Antarctica | *Masahiro Minowa (Nagoya University), Evgeny A. Podolskiy (Hokkaido University), Shin Sugiyama (Hokkaido University) |  |
| OMp20 | Fractionation of O ₂ /N ₂ and Ar/N ₂ in polar ice cores during bubble formation, bubble-clathrate transition, and gas loss during storage from precise gas measurements of the Dome Fuji ice core, Antarctica | *Ikumi Oyabu (NIPR), Kenji Kawamura (NIPR & SOKENDAI & JAMSTEC), Kyotaro Kitamura (NIPR), Shuji Fujita (NIPR & SOKENDAI), Tsutomu Uchida (Hokkaido University), Jeffery P. Severinghaus (SIO), Jacob Morgan (SIO), Motohiro Hirabayashi (NIPR) |  |
| OMp21 | Microwave observation of snow melting, Rain-On-Snow | *Nuerasimuguli Alimasi (NIPR), Hiroyuki Enomoto (NIPR & SOKENDAI), Naohiko Hirasawa |  |

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| | and ice lens formation in polar regions | (NIPR & SOKENDAI) | |
| OMP22 | Ice speed and frontal variations of outlet glaciers on Lützow-Holm Bay, East Antarctica, after a breakup of land-fast sea ice | *Ken Kondo (Hokkaido University), Shin Sugiyama (Hokkaido University) |  |
| OMP23 | Approaches for integrated awareness of flow velocity, outflux, and thinning rate of Shirase Glacier using satellite data | *Shotaro Ohkawa (Waseda University), Koichiro Doi (NIPR & SOKENDAI), Kazuki Nakamura (Nihon University), Hiroto Nagai (Waseda University) |  |
| OMP24 | Position of grounding line at outlet glacier based on DDInSAR analysis | *Chiayuki Narama (Niigata University), Tsutomu Yamanokuchi (RESTEC), Shin Sugiyama (Hokkaido University) |  |
| OMP25 | Spatial variations in biogenic impurities in the ablation area of Gulkana Glacier in Alaska | *Tsubasa Takahashi (Chiba University), M. Ono (Chiba University), A. Kizawa (Chuo University), Nozomu Takeuchi (Chiba University) |  |
| OMP26 | Recent increase of extreming snowfall events in Kanto and its relation to the shift of surrounding fields | *Yuki Nakamura (Mie University), Yoshihiro Tachibana (Mie University), Yuta Ando (Mie University & Niigata University) |  |
| OMP27 | Continuous methane measurement by a Continuous Flow Analysis system | *Ayaka Yonekura (SOKENDAI), Kenji Kawamura (NIPR & SOKENDAI), Ikumi Oyabu (NIPR), Kyotaro Kitamura (NIPR), Jun Ogata (NIPR), Motohiro Hirabayashi (NIPR), Kaori Fukuda (NIPR), Kumiko Goto-Azuma (NIPR & SOKENDAI), Hieaki Motoyama (NIPR & SOKENDAI) |  |
| OMP28 | A novel laser-melting ice-core sampler with high depth resolution and high throughput for discrete ice core analyses | *Yuko Motizuki (RIKEN Nishina Center for Accelerator-Based Science), Yoichi Nakai (RIKEN Nishina Center for Accelerator-Based Science), Kazuya Takahashi (RIKEN Nishina Center for Accelerator-Based Science), Junya Hirose (RIKEN Nishina Center for Accelerator-Based Science), Yu Vin Sahoo (RIKEN Nishina Center for Accelerator-Based Science), Yasushige Yano (RIKEN Nishina Center for Accelerator-Based Science), Masaki Yumoto (RIKEN Nishina Center for Accelerator-Based Science), Masayuki Maruyama (RIKEN Nishina Center for Accelerator-Based Science), Michio Sakashita (RIKEN Nishina Center for Accelerator-Based Science), Kiwamu Kase (RIKEN Nishina Center for Accelerator-Based Science), Satoshi Wada (RIKEN Nishina Center for Accelerator-Based Science) |  |
| OMP29 | Establishment of investigating methods for clarifying the correspondence between infrasound in the polar regions and natural phenomena such as the aurora | *Haruka Ohata (Kochi University of Technology), Masa-yuki Yamamoto (Kochi University of Technology) |  |
| OMP30 | Sea-water spray measurement and icebreaking operation during JARE61 Shirase cruise | *Tomoyuki Onomura (The University of Tokyo), Rintaro Matsushita (The University of Tokyo), Hajime Yamaguchi (The University of Tokyo), Shuki Ushio (NIPR), Yutaka Yamauchi (Technical Research Center, Japan Marine United Corporation), Shigeya Mizuno (Technical Research Center, Japan Marine United Corporation) |  |
| OMP31 | Development of heat and salt flux dataset associated with sea-ice processes in the Antarctic Ocean | *Sohey Nihashi (National Institute of Technology (KOSEN) Tomakomai College), Kazuki Nakata (Hokkaido University), Ryosuke Makabe (NIPR), Noriaki Kimura (The University of Tokyo), Takeshi Tamura (NIPR) |  |
| OMP32 | The relation between sea ice stratigraphy and particle concentration in an Alaskan coastal lagoon | *Masato Ito (Japan Agency of Marine-Earth Science and Technology), Andrew R. Mahoney (University of Alaska Fairbanks), Chris M. Polashenski (Dartmouth College & U.S. Army Cold Regions Research and Engineering Laboratories), Takenobu Toyota (Hokkaido University), Sumito Matoba (Hokkaido University), Takashi Kikuchi (Japan Agency of Marine-Earth Science and Technology) |  |
| OMP33 | Formulation of disequilibrium for estimating the anthropogenic CO2 over the Southern Ocean | *Chenye Wang (Hokkaido University), Bofeng F. Li (Hokkaido University), Xianliang L. Pan (Hokkaido University), Yutaka W. Watanabe (Hokkaido University) |  |
| OMP34 | The effect of basal melting of the Totten Ice Shelf on marine biogeochemical components in Sabrina Coast, East Antarctica | *Tetsuya Tamura (Hokkaido University), Daiki Nomura (Hokkaido University), Daisuke Hirano (Hokkaido University), Takeshi Tamura (NIPR), Masaaki Kikuchi (Hokkaido University), Gen Hashida (NIPR), Shigeru Aoki (Hokkaido University), Hiroto Murase (TUMSAT) |  |
| OMP35 | Variations of surface water carbonate chemistry from winter to summer in the Indian sector of the Southern Ocean | *Manami Tozawa (Hokkaido University), Daiki Nomura (Hokkaido University), Shin-ichiro Nakaoka (National Institute for Environmental Studies), Masaaki Kiuchi (Hokkaido University), Daisuke Hirano (Hokkaido University), Shigeru Aoki (Hokkaido University), Hiroto Murase (Tokyo University of Marine Science and Technology) |  |
| OMP36 | Multi-decadal trend of freshening over the Southern Ocean coastal regions based on a progressed parameterization technique | *Xianliang L. Pan (Hokkaido University), Bofeng F. Li (Hokkaido University), Yutaka W. Watanabe (Hokkaido University) |  |
| OMP37 | Long term observation of winter lake surface changes in Izunuma, in northeast Japan | *Tatsuru Sato (National Institute of Technology), Ken-ichi Kobayashi (National Institute of Technology) |  |
| OMP38 | Development and Installation of Network Connected Meteorological Sensors in the Shiretoko World Natural Heritage region | *Kazutaka Tateyama (Kitami Institute of Technology), Hiroshi Ohno (Kitami Institute of Technology) |  |

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[OS] Space and upper-atmosphere sciences











Scopes



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

Conveners : **Masaki Okada** and **Koji Nishimura** (NIPR)











Real-time Oral presentations (13:00 – 14:30, 14:45 - 16:15)


Date: Wed. 2 December

| Chair: Akira Sessai Yukimatu (NIPR) | | | | |
|-------------------------------------|-------------|--|---|---|
| OSo1 | 13:00-13:15 | SuperDARN plan for Phase X JARE project and beyond | *Akira Sessai Yukimatu (NIPR & SOKENDAI), Tsutomu Nagatsuma (NICT), Nozomu Nishitani (ISEE), Tomoaki Hori (ISEE), Keisuke Hosokawa (UEC), Masakazu Watababe (ICSWSE), Hideaki Kawano (ICSWSE), Yusuke Ebihara (Kyoto University), Hideo Maeno (NICT), Ryuho Kataoka (NIPR & SOKENDAI), Yoshimasa Tanaka (NIPR & SOKENDAI & PEDSC), Koji Nishimura (NIPR & SOKENDAI & PEDSC), Natsuo Sato (NIPR), Yuka Kadowaki (NIPR & PEDSC) |  |
| OSo2 | 13:15-13:30 | Development of the imaging receiver system for the SuperDARN Hokkaido East radar | *Nozomu Nishitani (ISEE, Nagoya University), Yoshiyuki Hamaguchi (ISEE, Nagoya University), Tomoaki Hori (ISEE, Nagoya University) |  |
| OSo3 | 13:30-13:45 | Inversion Technique on Interferometric Atmospheric Radar | *Koji Nishimura (NIPR), Ryosuke Tamura (Kyoto University), Hiroyuki Hashiguchi (Kyoto University) |  |
| OSo4 | 13:45-14:00 | Simultaneous observations of a low-altitude ion upflow by the EISCAT radar and molecular ions in the ring current by the Arase (ERG) satellite | *Masayoshi Takada (Tokyo University), Kanako Seki (Tokyo University), Yasunobu Ogawa (NIPR), Kunihiro Keika (Tokyo University), Satoshi Kasahara (Tokyo University), Shoichiro Yokota (Osaka University), Tomoaki Hori (Nagoya University), Kazushi Asamura (Institute of Space and Astronautical Science), Yoshizumi Miyoshi (Nagoya University), Iku Shinohara (Institute of Space and Astronautical Science) |  |
| OSo5 | 14:00-14:15 | Auroral computed tomography method and its application to discrete aurora | *Yoshimasa Tanaka (Polar Environment Data Science Center & NIPR & SOKENDAI), Yasunobu Ogawa (Polar Environment Data Science Center & NIPR & SOKENDAI), Akira Kadokura (Polar Environment Data Science Center & NIPR & SOKENDAI) |  |
| OSo6 | 14:15-14:30 | Antarctic large area network observation of auroral phenomena using unmanned system: Current status of project in 2020 | *Akira Kadokura (NIPR), Yasunobu Ogawa (NIPR), Yoshimasa Tanaka (NIPR), Hisao Yamagishi (NIPR), Masaki Okada (NIPR), Ryuho Kataoka (NIPR), Herbert Akihito Uchida (SOKENDAI), Yuichi Otsuka (Nagoya Univ.), Tetsuo Motoba (JHU/APL), Natsuo Sato (NIPR), Gunnlaugur Bjornsson (Univ. of Iceland), Jean Rasson (Royal Meteorological Institute of Belgium), Alain Hubert (International Polar Foundation), Ashwini K. Sinha (Indian Institute of Geomagnetism) |  |
| | 14:30-14:45 | Break | | |
| Chair: Kataoka Ryuho (NIPR) | | | | |
| OSo7 | 14:45-15:00 | Resolving the evolution of pulsating aurora: High-speed Tjörnes-Arase-Syowa conjugate observation | *Herbert Akihito Uchida (SOKENDAI), Ryuho Kataoka (NIPR), Kiyoka Murase (SOKENDAI), Shoya Matsuda (ISAS/JAXA), Yoshiya Kasahara (Kanazawa University), Masafumi Shoji (ISEE), Yoshizumi Miyoshi (ISEE), Iku Shinohara (ISAS/JAXA), Ayako Matsuoka (Kyoto University), Satoshi Kurita (RISH), Keisuke Hosokawa (UEC), Shun Imajo (ISEE) |  |
| OSo8 | 15:00-15:15 | Two current systems in the preliminary phase of the Sudden Commencement | *Shigeru Fujita (Meteorological College & NIPR) |  |
| OSo9 | 15:15-15:30 | Feasibility study of the global MHD simulation code toward reanalysis of the space weather phenomena | *Shigeru Fujita (Meteorological College & NIPR), Shin'ya Nakano (The Institute of Statistical Mathematics), Akira Kadokura (NIPR), Yoshimasa Tanaka (NIPR), Ryuho Kataoka (NIPR), Aoi Nakamizo (NICT), Yoshibumi Kubota (NICT), Keisuke Hosokawa (The University of Electro-Communications), Satoko Saita (National Institute of Technology, Kitakyushu College) |  |
| OSo10 | 15:30-15:45 | New auroral camera network in Antarctic polar cap | *Ryuho Kataoka (NIPR & SOKENDAI), Takanori Nishiyama (NIPR & SOKENDAI), Akira Sessai Yukimatu (NIPR & SOKENDAI), Yoshimasa Tanaka (NIPR & SOKENDAI), Yasunobu Ogawa (NIPR & SOKENDAI), Akira Kadokura (NIPR & SOKENDAI), Herbert Akihito Uchida (NIPR & SOKENDAI), Keisuke Hosokawa (UEC), Yusuke Ebihara (Kyoto University), Takeshi |  |

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| | | | Sakanoi (Tohoku University), Masakazu Watanabe (Kyushu University), Shigeru Fujita (Meteorological College), Takashi Tanaka (Kyushu University) | |
| OSo11 | 15:45-16:00 | A Particular ICME Event in August 2018 Observed with the Ground Based Muon Detectors and Neutron Monitors | *Wataru Kihara (Shinshu University), Kazuoki Munakata (Shinshu University), Chihiro Kato (Shinshu University), Ryuho Kataoka (NIPR), Akira Kadokura (NIPR), Shoko Miyake (National Institute of Technology), et al. (The GMDN collaboration) |  |
| OSo12 | 16:00-16:15 | Upgrading 30cm Sub-millimeter Telescope to Map the Milky Way in CO and CI Lines | *Masumichi Seta (Kwansei Gakuin University), Naomasa Nakai (Kwansei Gakuin University), Nario Kuno (University of Tsukuba & Tomonaga Center for the History of the Universe), Hiro Saito (University of Tsukuba & Tomonaga Center for the History of the Universe), Fuuta Takiguchi (University of Tsukuba), Toru Koyama (University of Tsukuba), Makoto Nagai (National Astronomical Observatory of Japan), Kazuo Sorai (Hokkaido University & University of Tsukuba), Yu Yashima (Hokkaido University), Kazuki Shimizu (Hokkaido University), Taketo Nagasaki (High Energy Accelerator Research Organization), Tom Nitta (University of Tsukuba & Tomonaga Center for the History of the Universe), Dragan Salak (University of Tsukuba & Tomonaga Center for the History of the Universe), Takuya Hashimoto (University of Tsukuba & Tomonaga Center for the History of the Universe), Toshifumi Umemoto (National Astronomical Observatory of Japan), Antarctic Astronomy Consortium of Japan |  |

Poster presentations (16 November - 18 December)

| | | | |
|-------|--|---|---|
| OSp1 | OI 630.0 nm and N2 1PG emissions in pulsating aurora events detected by an optical spectrograph at Tromsø, Norway | *Takuo T. Tsuda (UEC), Chengyu Li (UEC), Shiori Hamada (UEC), Keisuke Hosokawa (UEC), Shin-ichiro Oyama (Nagoya Univ. & NIPR & University of Oulu), Satonori Nozawa (Nagoya Univ.), Tetsuya Kawabata (Nagoya Univ.), Akira Mizuno (Nagoya Univ.), Junichi Kurihara (Hokkaido Univ.), Takanori Nishiyama (NIPR & SOKENDAI), Michael J. Kosch (SANSa & Lancaster University & University of the Western Cape) |  |
| OSp2 | Yearly variations in Be-7 concentrations in the surface air at Iceland and Japan for 16 years from 2003: Solar modulation of cosmogenic nuclide | *Hirohisa Sakurai (Yamagata University), Youmei Kawamura (Yamagata University), Fuyuki Tokanai (Yamagata University), Emiko Inui (Yamagata University), Mirei Takeyama (Yamagata University), Toru Moriya (Yamagata University), Fusa Miyake (ISEE), Akira Kadokura (NIPR), Natsuo Sato (NIPR), Bjornsson Gunnlaugur (Iceland Univ.) |  |
| OSp3 | Aurora and airglow observations with the multi-wavelength all-sky attitude-stabilized imagers and GNSS receiver on Shirase | *Takashi Sakanoi (Tohoku University), Takuo T. Tsuda (The University of Electro-Communications), Takeshi Aoki (The University of Electro-Communications), Akinori Saito (Kyoto University), Takahiro Naoi (NICT), Masato Nagahara (NICT), Mitsumu K. Ejiri (NIPR), Takanori Nishiyama (NIPR) |  |
| OSp4 | Temporal evolutions of N2+ Meinel (1,2) band near 1.5 um associated with aurora breakup and their effects on mesopause temperature estimations from OH Meinel (3,1) band | *Takanori Nishiyama (NIPR & SOKENDAI), Makoto Taguchi (Rikkyo University), Hidehiko Suzuki (Meiji University), Peter Dalin (Swedish Institute of Space Physics), Yasunobu Ogawa (NIPR & SOKENDAI & Joint Support-Center for Data Science Research), Urban Brändström (Swedish Institute of Space Physics), Takeshi Sakanoi (Tohoku University) |  |
| OSp5 | Toward full-automatic FLR identification and density estimation from SuperDARN VLOS data to identify magnetospheric regions | *Hideaki Kawano (Kyushu University), Akira Sessai Yukimatu (NIPR & SOKENDAI), Nozomu Nishitani (Nagoya University), Yoshimasa Tanaka (NIPR & SOKENDAI), Satoko Saita (Kitakyushu College), Tomoaki Hori (Nagoya University) |  |
| OSp6 | Network observations of aurora and airglow with low-cost multi-wavelength imager system | *Yasunobu Ogawa (NIPR & SOKENDAI & Joint Support-Center for Data Science Research), Akira Kadokura (NIPR & SOKENDAI & Joint Support-Center for Data Science Research), Yoshimasa Tanaka (NIPR & SOKENDAI & Joint Support-Center for Data Science Research), and WMI team |  |
| OSp7 | Visualizing field-aligned electric fields associated with interchange-type reconnection | *Masakazu Watanabe (Kyushu University), Tomoya Asano (Kyushu University), Dongsheng Cai (University of Tsukuba), Peikun Xiong (University of Tsukuba), Shigeru Fujita (Meteorological College), Takashi Tanaka (Kyushu University) |  |
| OSp8 | Pulse spectrum simulation using optical heterodyne interferometry | *Miki Nishimura (Shinshu University), Takuya D. Kawahara (Shinshu University), Katsuhiko Tsuno (RIKEN Center for Advanced Photonics), Mitsumu Ejiri (NIPR), Takayo Ogawa (RIKEN Center for Advanced Photonics), Satoshi Wada (RIKEN Center for Advanced Photonics), Satonori Nozawa (ISEE, Nagoya University) |  |
| OSp9 | Study on the effect of asymmetric pulsed laser spectrum on wind bias observed by the Na lidar at Tromsø | *Yoshitaka Kobayashi (Shinshu University), Takuya D. Kawahara (Shinshu University), Satonori Nozawa (ISEE, Nagoya University), Takuo T. Tsuda (The University of Electro-Communications), Norihito Saito (RIKEN Center for Advanced Photonics) |  |
| OSp10 | Development of a new M-I coupling algorithm in global MHD magnetosphere simulation: Alfvénic-Coupling | *Aoi Nakamizo (National Institute of Information and Communications Technology), Akimasa Yoshikawa (Kyushu University), Hiroyuki Nakata (Chiba University), Keiichiro Fukazawa (Kyoto University), Takashi Tanaka (Kyushu University) |  |
| OSp11 | Antarctic Terahertz Telescope Project | *Nario Kuno (University of Tsukuba & Tomonaga Center for the History of the Universe), Naomasa Nakai (Kwansei Gakuin University), Masumichi Seta (Kwansei Gakuin University), Kazuo Sorai (Hokkaido University & University of Tsukuba & Tomonaga Center for the History of the Universe), Makoto Nagai (National Astronomical Observatory of Japan), Tom Nitta (University of Tsukuba & Tomonaga Center for the History of the Universe), Hiro Saito (University of Tsukuba & Tomonaga Center for the History of the Universe), Dragan Salak (University of Tsukuba & Tomonaga Center for the History of the Universe), Takuya Hashimoto (University of Tsukuba & Tomonaga Center for the History of the Universe), Tomofumi Umemoto (National Astronomical Observatory of Japan), and Antarctic astronomy consortium of Japan |  |

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| OSp12 | Operational Report and use-case of New Polar Science Computer System | *Masaki Okada (NIPR) |  |
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Special session

Interdisciplinary sessions

Ordinary sessions

Time Table

[Oral session](#) | [Poster session](#)

Interdisciplinary Session

[IW] Whole atmosphere

Scopes











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.

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

Real-time Oral presentations (13:30 – 15:00, 15:30 – 17:30)








Date: Thu. 3 December

Note: [I] represents an invited talk.

| Chair: Naohiko Hirasawa (NIPR) | | | | |
|--------------------------------|---------------|---|---|---|
| IWo1 | 13:30 - 13:45 | The analysis of extreme tropopause fold events at Syowa Station in the Antarctic | *Masatoshi Mizukoshi (The University of Tokyo), Masashi Kohma (The University of Tokyo), Kaoru Sato (The University of Tokyo) |  |
| IWo2 | 13:45 - 14:00 | The Kelvin-Helmholtz billows in the Antarctic troposphere and lower stratosphere captured by the PANSY radar at Syowa Station (69.0°S, 39.6°E) | *Yuichi Minamihara (The University of Tokyo), Kaoru Sato (The University of Tokyo), Masaki Tsutsumi (NIPR) |  |
| IWo3 | 14:00 - 14:15 | Characteristics of inertia gravity waves over Syowa Station in summer -Comparison between the PANSY radar and the ERA5 reanalysis- | *Lihito Yoshida (SOKENDAI), Yoshihiro Tomikawa (NIPR & SOKENDAI), Mitsumu K. Ejiri (NIPR & SOKENDAI), Masashi Kohma (The University of Tokyo), Kaoru Sato (The University of Tokyo) |  |
| IWo4 | 14:15 - 14:30 | Current status of LODEWAVE (Long-Duration balloon Experiment of gravity WAVE over Antarctica) | *Yoshihiro Tomikawa (NIPR & SOKENDAI), Kaoru Sato (The University of Tokyo), Yoshitaka Saito (Japan Aerospace Exploration Agency), Isao Murata (Tohoku University), Naohiko Hirasawa (NIPR & SOKENDAI), Masashi Kohma (The University of Tokyo), Kyoichi Nakashino (Tokai University), Daisuke Akita (Tokyo Institute of Technology), Takuma Matsuo (Meiji University), Masatomo Fujiwara (Hokkaido University), Lihito Yoshida (SOKENDAI) |  |
| IWo5 | 14:30 - 14:45 | A study of dynamical processes in the middle atmosphere associated with a sudden stratospheric warming using a high-resolution and high-top general circulation model | *Haruka Okui (The University of Tokyo), Kaoru Sato (The University of Tokyo), Dai Koshin (The University of Tokyo), Shingo Watanabe (JAMSTEC) |  |
| IWo6 | 14:45 - 15:00 | Time Variation of PMWE and Turbulent Energy Dissipation Rates after the Stratospheric Sudden Warming in the Southern Hemisphere in 2019 | *Masashi Kohma (The University of Tokyo), Kaoru Sato (The University of Tokyo), Koji Nishimura (NIPR), Masaki Tsutsumi (NIPR & SOKENDAI) |  |
| | 15:00 - 15:30 | Break | | |
| Chair: Masaki Tsutsumi (NIPR) | | | | |
| IWo7 | 15:30 - 15:45 | Statistical study of atmospheric stability in the polar upper mesosphere and lower thermosphere above Tromsø by using sodium LIDAR data | *Sekiho Maeda (Nagoya University), Satonori Nozawa (Nagoya University), Takuya Kawahara (Shinshu University), Norihito Saito (RIKEN), Satoshi Wada (RIKEN), Takuo Tsuda (The University of Electro-Communications), Toru Takahashi (Electronic Navigation Research Institute & University of Oslo), Tetsuya Kawabata (Nagoya University), Chris Hall (UiT The Arctic University of Norway) |  |
| IWo8 | 15:45 - 16:00 | Statistical study of Sporadic Sodium Layer (SSL) in the polar MLT region | *Satonori Nozawa (ISEE, Nagoya University), Takuo T. Tsuda (The University of Electro-Communications), Norihito Saito (RIKEN Center for Advanced Photonics), Toru Takahashi (University of Oslo & Electronic Navigation Research Institute), Takuya Kawahara (Shinshu University), Yasunobu Ogawa (NIPR), Hitoshi Fujiwara (Seikei University), Satoshi Wada (RIKEN Center for Advanced Photonics), Tetsuya Kawabata (ISEE, Nagoya University), Chris Hall (UiT The Arctic University of Norway), Asgeir Brekke (UiT The Arctic University of Norway) |  |
| IWo9 | 16:00 - 16:15 | A frequency-tunable resonance scattering lidar observation at Syowa in Antarctic - Characteristics of calcium ion layer in the mesosphere and lower-thermosphere - | *Mitsumu K. Ejiri (NIPR & SOKENDAI), Takanori Nishiyama (NIPR & SOKENDAI), Takuo T. Tsuda (UEC), Takuji Nakamura (NIPR & SOKENDAI), Makoto Abo (Tokyo Metropolitan University), Katsuhiko Tsuno (RIKEN, RAP), Takuya D. Kawahara (Shinshu Univ.), Takayo Ogawa (RIKEN, RAP), Satoshi Wada (RIKEN, RAP) |  |
| IWo10 | 16:15 - 16:30 | Development of the mesosphere wind observation using meteors on the PANSY radar | *Taishi Hashimoto (NIPR), Masaki Tsutsumi (NIPR), Koji Nishimura (NIPR), Toru Sato (Kyoto University), Kaoru Sato (The University of Tokyo) |  |

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| IWo11 | 16:30 - 16:45 | Imaging Observation of Ionospheric Field Aligned Irregularities by the PANSY Radar at Antarctic Syowa Station | *Daisuke Kagawa (Kyoto University), Taishi Hashimoto (NIPR), Akinori Saito (Kyoto University), Koji Nishimura (NIPR), Masaki Tsutsumi (NIPR), Toru Sato (Kyoto University), Kaoru Sato (Tokyo University) |  |
| IWo12 | 16:45 - 17:00 | Statistical study of solar activity and seasonal dependence of semidiurnal tide in the polar lower Thermosphere on quiet days using EISCAT radar data | *Hirotaka Koyama (Nagoya University), Satonori Nozawa (Nagoya University), Yasunobu Ogawa (NIPR), Asgeir Brekke (UiT The Arctic University of Norway) |  |
| IWo13 | 17:00 - 17:30 | [I] Solar Impact on Climate through Energetic Particle Precipitation | *Yvan J. Orsolini (Norwegian Institute for Air Research) |  |

Poster presentations (16 November - 18 December)

| | | | |
|------|---|--|---|
| IWp1 | Multi-frequency mm-wave spectrometer for atmospheric minor constituents at Syowa Station | *Akira Mizuno (ISEE, Nagoya University), Daichi Tsutsumi (ISEE, Nagoya University), Takahiro Kosegaki (ISEE, Nagoya University), Hiroyuki Iwata (ISEE, Nagoya University), Taku Nakajima (ISEE, Nagoya University), Kohei Haratani (ISEE, Nagoya University), Tomoo Nagahama (ISEE, Nagoya University), Syoki Iriyama (ISEE, Nagoya University), Genma Mizoguchi (ISEE, Nagoya University), Naoto Sekiya (University of Yamanashi), Takuma Hayashi (University of Yamanashi), Yoshihiro Tomikawa (NIPR), Mitsumu K. Ejiri (NIPR), Kaoru Sato (The University of Tokyo) |  |
| IWp2 | Direct Evidence of Nitrate Aerosol Formation in Summer Antarctic Stratosphere Obtained by a Balloon-Assisted Unmanned Aerial Vehicle Using Two-Stage Separation Method | *Masahiko Hayashi (Fukuoka University), Shin-Ichiro Higashino (Kyushu University), Takuya Okada (Kyushu University), Shuji Nagasaki (Kyushu University), Koichi Shiraishi (Fukuoka University), Keiichi Ozuka (Nippon Tungsten Co. Ltd) |  |
| IWp3 | Sporadic Fe layer event associated with vertical ion drift based on wind shear theory: simultaneous observation by a resonance scattering lidar and an MF radar at Syowa station (69.0°S, 39.6°E) | *Takanori Nishiyama (NIPR & SOKENDAI), Mitsumu K. Ejiri (NIPR & SOKENDAI), Takuo T. Tsuda (The University of Electro- Communications), Katsuhiko Tsuno (ASI, RIKEN), Takuji Nakamura (NIPR & SOKENDAI), Masaki Tsutsumi (NIPR & SOKENDAI), Makoto Abo (Tokyo Metropolitan University), Taku D. Kawahara (Shinshu University), Takayo Ogawa (ASI, RIKEN), Satoshi Wada (ASI, RIKEN) |  |
| IWp4 | Seasonal variations of 18O and 13C of CO2 in the upper troposphere and lower stratosphere over Siberia | *Yoichi Inai (Tohoku University & JMA), Shotaro Chida (Tohoku University), Shinji Morimoto (Tohoku University), Shohei Murayama (AIST), Shuji Aoki (NIPR), Takakiyo Nakazawa (Tohoku University), Toshinobu Machida (NIES), Hidekazu Matsueda (MRI), Yousuke Sawa (JMA), Kazuhiro Tsuboi (MRI), Keiichi Katsumata (NIES & Takachiho Chem. Industrial Co.), Ryo Fujita (MRI) |  |
| IWp5 | Short-term variations of HCl and HF trends observed with FTIR at Tsukuba and Rikubetsu | *Isao Murata (Tohoku University), Yoshihiro Tomikawa (NIPR & SOKENDAI), Isamu Morino (National Institute for Environmental Studies), Hideaki Nakajima (National Institute for Environmental Studies), Hideharu Akiyoshi (National Institute for Environmental Studies), Tomoo Nagahama (Nagoya University) |  |
| IWp6 | The impact of assimilation of PANSY radar observation at Syowa station on atmospheric circulation reproduction in reanalysis data | *Kazutoshi Sato (Kitami Institute of Technology), Jun Inoue (NIPR), Akira Yamazaki (JAMSTEC), Yoshihiro Tomikawa (NIPR) |  |
| IWp7 | Na layer variation related with cosmic noise absorption observed at Syowa, Antarctic | *Takuo T. Tsuda (UEC), Yoshimasa Tanaka (NIPR & SOKENDAI), Ryo Tozu (UEC), Kyogo Takizawa (UEC), Mitsumu K. Ejiri (NIPR & SOKENDAI), Takanori Nishiyama (NIPR & SOKENDAI), Takuya D. Kawahara (Shinshu Univ.), Takuji Nakamura (NIPR & SOKENDAI) |  |

Special session

Interdisciplinary sessions

Ordinary sessions

Time Table

[Oral session](#) | [Poster session](#)

Interdisciplinary Session

[IN] New insights of ship-based interdisciplinary study in Southern Ocean










Scopes






This session aims to highlight a range of geology, petrology, geophysics, paleo-oceanography, geochemistry, marine biology, environmental science, and ocean dynamics on multi spatial-temporal scales.

Conveners : Masakazu Fujii (NIPR), Minoru Ikehara (Kochi University), Asuka Yamaguchi (University of Tokyo), Kenichiro Tani (National Museum of Nature and Science), Hidetaka Nomaki (JAMSTEC), and Koji Seike (AIST)

Real-time Oral presentations (13:00 – 15:15, 15:30 – 18:00)

Date: Thu. 3 December

| Chair: Hidetaka Nomaki (JAMSTEC) | | | | |
|--|---------------|--|---|---|
| INo1 | 13:00 - 13:15 | Hydrographic section along 57°E in the South Indian Ocean | *Katsuro Katsumata (JAMSTEC), Yuichiro Kumamoto (JAMSTEC), Hiroshi Uchida (JAMSTEC), Shinya Kouketsu (JAMSTEC), Masahito Shigemitsu (JAMSTEC), Kosei Sasaoka (JAMSTEC), Minoru Hamana (JAMSTEC) |  |
| INo2 | 13:15 - 13:30 | High-resolution ocean temperatures and Polar Front latitudinal migration assessment based on radiolarian and diatoms assemblages in the Kerguelen Plateau region, Southern Ocean, over the last 360 kyrs | *Matthieu Civel-Mazens (Kochi University & AIST), X. Crosta (Université de Bordeaux), G. Cortese (GNS Science), E. Michel (LSCE), A. Mazaud (LSCE), O. Ther (Université de Bordeaux), M. Ikehara (Kochi University), T. Itaki (AIST) |  |
| INo3 | 13:30 - 13:45 | Deep-sea macrobenthos biodiversity survey at the Southern Ocean in KH-19-6 Leg 4 | *Naoto Jimi (NIPR), *Akito Ogawa (The University of Tokyo), Shimpei F. Hiruta (National Museum of Nature and Science), Chong Chen (Japan Agency for Marine-Earth Science and Technology), Itaru Kobayashi (The University of Tokyo), Hironori Komatsu (National Museum of Nature and Science), Masanori Okanishi (The University of Tokyo), Gregorius Altius Pratama (The University of Tokyo), Satoshi Imura (NIPR), Hidetaka Nomaki (Japan Agency for Marine-Earth Science and Technology), Kenichiro Tani (National Museum of Nature and Science), Minoru Ikehara (Kochi University) |  |
| INo4 | 13:45 - 14:00 | Floating microplastics in the Eastern South Pacific and the Southern Ocean | *Ryota Nakajima (JAMSTEC), Hidetaka Nomaki (JAMSTEC), Maki Aita Noguchi (JAMSTEC), Takuya Ohnishi (The University of Tokyo), Hayao Yokochi (Kindai-University), Kazutaka Takahashi (The University of Tokyo), Minoru Ikehara (Kochi University), Atsushi Tsuda (The University of Tokyo) |  |
| Chair: Asuka Yamaguchi (The University of Tokyo) | | | | |
| INo5 | 14:00 - 14:15 | Vector magnetic anomalies around the East Scotia Ridge | *Yoshifumi Nogi (NIPR) |  |
| INo6 | 14:15 - 14:30 | Geochemical characteristics of the mantle in the Scotia arc region constrained by osmium isotopes and platinum-group elements | *Chihiro Ohshima (The University of Tokyo), Norikatsu Akizawa (The University of Tokyo), Akira Ishikawa (Tokyo Institute of Technology), Sung Hi Choi (Chungnam National University), Kenichiro Tani (National Museum of Nature and Science), Asuka Yamaguchi (The University of Tokyo), Teruaki Ishii (Shizuoka University) |  |
| INo7 | 14:30 - 14:45 | Characteristics of sediments cored from the South Shetland Trench | *Asuka Yamaguchi (The University of Tokyo), Ippei Yamamoto (The University of Tokyo), Yuichi Okuma (The University of Tokyo), Kodai Kato (Kochi University), Yuji Kato (Kochi University), Kaoru Kubota (Kobe University), Kenichiro Tani (National Museum of Nature and Science), Hiroaki Koge (National Institute of Advanced Industrial Science and Technology), Jinyu Zhou (The University of Tokyo), Hanaya Okuda (The University of Tokyo), Takashi Hakomori (The University of Tokyo), Minoru Ikehara (Kochi University) |  |
| INo8 | 14:45 - 15:00 | New geophysical observation of circum-Antarctic mid-ocean ridges | *Masakazu Fujii (NIPR & SOKENDAI), Kyoko Okino (The University of Tokyo), Yoshifumi Nogi (NIPR & SOKENDAI) |  |
| INo9 | 15:00 - 15:15 | Geology of the Conrad Rise: Summary of six cruises by R/V Hakuho-Maru | *Hiroshi Sato (Senshu University), Masakazu Fujii (NIPR), Taichi Sato (AIST), Yoshifumi Nogi (NIPR), Shiki Machida (Chiba Institute of Technology), Ryoko Senda (Kyushu University), Christine Meyzen (Universita degli Studi di Padova), Michael Bizimis (University of South Carolina), Hideo Ishizuka (Kochi University), Yukiko Kozaka (Nagoya University), Yuki Tokuda (Tottori University of Environmental Studies), Takuma Haga (National Museum of Nature and Science), Yukito Kurihara (Mie University), Shungo Kawagata |  |

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| | | | (Yokohama National University), Hiroki Matsui (Akita University) | |
| | 15:15 - 15:30 | Break | | |
| Chair: Minoru Ikehara (Kochi University) | | | | |
| INo10 | 15:30 - 15:45 | Estimating the Contribution of Local and Advective parcels to Mixed Layer Dynamics in the Indian Sector of the Southern Ocean through a Box Model approach | *Matheus F. Azevedo (TUMSAT), Yujiro Kitade (TUMSAT), Shigeru Aoki (Hokkaido University) |  |
| INo11 | 15:45 - 16:00 | Cosmonaut Sea Meso-scale Oceanic Structure Survey (CoSMOSS) | *Shigeru Aoki (Hokkaido University), Daisuke Hirano (Hokkaido University), Takeshi Tamura (NIPR), Kohei Mizobata (TUMSAT), Kazuya Kusahara (JAMSTEC) |  |
| INo12 | 16:00 - 16:15 | Oceanic structure of the Vincennes Bay | *Keishi Shimada (TUMSAT), Kitade Yujiro (TUMSAT), Kohei Mizobata (TUMSAT), Takeshi Tamura (NIPR) |  |
| INo13 | 16:15 - 16:30 | The Heart of the East Antarctic Cryosphere-Ocean Synergy System (HEAT-CROSS) | *Kohei Mizobata (TUMSAT), Takeshi Tamura (NIPR), Daisuke Hirano (Hokkaido University), Ryosuke Makabe (NIPR) |  |
| INo14 | 16:30 - 16:45 | Possibility of oceanographic observations off Shackleton ice shelf | *Yoshihrio Nakayama (Hokkaido University), Masakazu Fujii (NIPR), Kay I. Ohshima (Hokkaido University), Shigeru Aoki (Hokkaido University) |  |
| Chair: Masakazu Fujii (NIPR) | | | | |
| | 16:45 - 17:00 | 3-min Poster Presentation (4 short talks of OGP1 - OGP4) | | |
| | 17:00 - 17:15 | Break | | |
| | 17:15 - 18:00 | General discussion | | |

Poster presentations (16 November - 18 December)

| | | | |
|------|---|--|---|
| INp1 | Carbon cycling associated with formation and transport of Cape Darnley Bottom Water | *Naoyuki Tamura (TUMSAT), Michiyo Yamamoto-Kawai (TUMSAT) |  |
| INp2 | The formation process of calcitic skeleton of deep-sea isidid octocorals inferred from crystal orientation | *Yukiko Kozaka (Nagoya University), Katsuyoshi Michibayashi (Nagoya University), Takenori Kato (Nagoya University), Yui Kouketsu (Nagoya University), Yuki Tokuda (Tottori University of Environmental Studies), Hiroshi Sato (Senshu University), Minoru Ikehara (Kochi University) |  |
| INp3 | Does GIA link Antarctic magmatism influenced by climate change to MORs activities? | *Tatsuo Kanamaru (Nihon University), Kenichiro Tani (National Museum of Nature and Science), Masahiro Ishikawa (Yokohama National University), Kuniyuki Furukawa (Aichi University), Masakazu Fujii (NIPR), Osamu Ishizuka (Geological Survey of Japan/AIST), Jun'ichi Okuno (NIPR), Iona McIntosh (Japan Agency for Marine-Earth Science and Technology), Motohiro Tsuboi (Kwansei Gakuin University) |  |
| INp4 | New constraints on the crustal structure of the South Orkney microcontinental block from detrital zircon U-Pb geochronology | *Kenichiro Tani (National Museum of Nature and Science), Philip T. Leat (British Antarctic Survey) |  |