

北大低温研・研究集会 2023

「過去 2000 年間の北極海古環境に関する研究集会」
「Holocene Arctic Palaeoclimate and Palaeocean Investigation Meeting」

日程: 2023 年 11 月 3 日(金)13:30~11 月 5 日(日)12:00

場所: 北海道大学 低温科学研究所 3F 講堂およびオンライン開催
(低温研へのアクセスは <https://www2.lowtem.hokudai.ac.jp/about.html#5> 参照)



趣旨: 近年、北極海環境の大きな変化が、北極域に生活する人々の生活を大きく変化させ、大気循環の変化を介して北半球中緯度域の人口稠密地域の気象にも影響している。しかし、これらの変化が 20-21 世紀温暖化に伴う特徴的なものであるのか、過去にも起きた自然変動と同様なものであるのか明らかではない。北極域研究加速プロジェクトでは、この疑問に答えるために、過去 2000 年間の西部北極海の環境変動を明らかにするべく、海洋地球研究船「みらい」による北極海航海 MR22-06C (完新世北極海調査航海 HAPPI) を 2022 年 8-9 月に実施し、西部北極海の 4 地点で長尺海底コアを採取した。採取したコアは高知コアセンターと北海道大学で分取した後、国内外の研究機関に送付し、現在、分析が進められている。本集会では、研究チームメンバーの成果報告を主体としながら、北極海に関心の高い研究者との議論を通じて、北極海古環境研究の進め方を検討するものである。

Research Meeting 2023, Institute of Low Temperature Research, Hokkaido University
Meeting on Arctic Ocean Palaeoenvironment over the Past 2000 Years

Date: Friday, November 3, 2023, 13:30 - Sunday, November 5, 2023, 12:00

Place: Auditorium on the 3rd floor of Institute of Low Temperature Science, Hokkaido University and online

(For access to the Institute of Low Temperature Science, see <https://www2.lowtem.hokudai.ac.jp/about.html#5>)

Purpose: In recent years, major changes in the Arctic Ocean environment have drastically

altered the lives of people living in the Arctic region, and through changes in atmospheric circulation, have also affected the climate of populated areas in the mid-latitudes of the Northern Hemisphere. However, it is not clear whether these changes are characteristic of 20th and 21st century warming or similar to natural variations that have occurred in the past. In order to answer this question, the ARCS II Project conducted the Arctic Ocean cruise MR22-06C (Holocene Arctic Palaeoclimate and Palaeocean Investigation; HAPPI) in August and September 2022 by the RV "Mirai" to unravel environmental changes in the western Arctic Ocean over the past 2000 years, and sediment cores were retrieved at four sites in the western Arctic Ocean. The collected cores were subsampled at the Kochi Core Center and Hokkaido University, and then sent to domestic and overseas research institutes for analysis. In this meeting, we will report the results of the project members and discuss how to proceed with paleoenvironmental research in the Arctic Ocean.

【11月3日（金）13:00～17:00】
3rd November Friday

13:00-13:10 「開会挨拶と趣旨説明」

山本正伸（北海道大学）

Session 1 On-site discussion on data interpretation (in the Japanese language)
セッション1 西部北極海堆積物の層序・岩相・年代の検討（座長：山本正伸） 日本語

13:40-17:00 会場参加者全員
各自のデータの発表と解釈に関する議論

【11月4日（土）8:30～17:00】
4th November Saturday

Session 2 Stratigraphy, lithology, age model of western Arctic sediment cores and paleoenvironments (Chaired by Osamu Seki, Masanobu Yamamoto, and Shinya Iwasaki) in English

8:30-8:45 Masanobu Yamamoto*, Masafumi Murayama
Introduction, location, lithology, stratigraphy of cores (on-site)

8:45-8:55 Michinobu Kuwae*, Masanobu Yamamoto
Gamma ray measurements and the age-depth model of surface cores (online/on-site)

8:55-9:05 Kenta Suzuki*, Laura Gemery, Takayuki Omori, Tom Cronin, Masanobu Yamamoto
Radiocarbon age-depth model (on-site)

9:05-9:35 All members, chaired by Masanobu Yamamoto*
Stratigraphy and age model: summary, questions and discussion (hybrid)

9:35-9:45 Coffee break

9:45-10:10 (20:45-21:10 EST on 3rd November) Leonid Polyak*

The Holocene sedimentation at the Chukchi margin based on geophysical and core data (online)

10:10-10:35 (21:10-21:35 EST on 3rd November) Laura Gemery*

Subdecadal-scale ostracode assemblages from box core MT1 detail changes at a Beaufort Sea coastal site during the past 70 years (online)

10:35-10:55 Katsura Yamada*, Mio Haruki, Masaki Kamiya

Ostracod assemblages from GC09 (BC2-2) in Barrow Canyon (on-site).

10:55-11:05 Coffee break

11:05-11:25 Kenta Suzuki*

XRD minerals in Sites MT1, BC2 and BC2-2 surface cores (on-site)

11:25-11:45 Koji Seike*, Masnaobu Yamamoto, MR22-06C sediment group member

Biogenic sedimentary structures in surface cores obtained by MR22-06C cruise (online)

11:45-12:05 Young Jin Joe*

Preliminary results: grain size distribution in drifted sediments along the northern Alaska margin (online)

12:05-12:25 Koyomi Nakazawa*, Osamu Nagafuchi, Kazuki Oura

Historical record of mercury in marine sediment cores collected from the Arctic Ocean (on-site)

12:25-12:45 Takahiro Miyasawa*, Keiji Horikawa

Nd isotopes and trace elements in BC2-GC8 Provenance analysis (on-site)

12:45-14:00 Lunch time

Session 3 On-site discussion on data interpretation (in the Japanese language)

セッション 3 西部北極海堆積物の古環境の検討 (座長:山本正伸) 日本語

13:40-17:00 会場参加者全員

各自のデータの発表と解釈に関する議論

【11月5日(日) 8:30~12:00】

5th November Sunday

Session 4 Stratigraphy, lithology, age model of western Arctic sediment cores and paleoenvironments (Chaired by Kenta Suzuki, Takuto Ando, and Masanobu Yamamoto) in English

8:30-8:50 Masanobu Yamamoto, Syoma Uchida, Loic David

Biomarkers in MT1 and BC2 surface cores (on-site)

8:50-9:10 Minoru Kobayashi*, Satoshi Nagai, Masanori Arai, Masanobu Yamamoto

SedaDNA in Sites MT1, MT2, BC2 and BC2-2 surface cores (on-site)

9:10-9:30 Renata Szarek*

Benthic foraminifera in MT1 and BC2 surface cores (on-site)

9:30-9:50 Yuji Yamamoto*

Preliminary magnetic results of the gravity cores recovered during the MR22-06C cruise (online)

9:40-9:50 Coffee break

10:00-10:20 Jonaotaro Onodera*

Tentative reconstruction of past sea-ice condition by silicoflagellate microfossil assemblage (on-site)

10:20-10:40 Kyosuke Yatsushiro*, Takuto Ando

Mechanism of organic matter deposition in MT1 and BC2 evaluated from palynofacies/palynomorph analyses (on-site)

10:40-11:00 Yusuke Suganuma*, Hiroyuki Matsuzaki, Takeyasu Yamagata, Masanobu Yamamoto

Preliminary Report on Beryllium Isotope Analyses of Arctic Sea Sediments (on-site)

11:00-11:20 (10:00-10:20 CST) Rong Wang*

A sediment record of rapid turbidity deposition in the southern Beaufort Sea since the Holocene (online)

11:20-11:30 Coffee break

11:30-12:00 All members, chaired by Masanobu Yamamoto

Summary discussion (hybrid)

12:00 Closing remark

