14Th ISCORD 2026 SAPPORO

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The 14th International Symposium on Cold Regions Development

July 7 Tue. –10 Fri., 2026

Sapporo Education and Culture Hall

Sapporo, JAPAN

14Th ISCORD 2026 SAPPORO

Message

from the Chairman of the Organizing Committee

Kou Hashimoto

Chairman,
ISCORD 2026 Organizing Committee

Director General,
Hokkaido Development Engineering Center

Welcome to Sapporo, and thank you very much for participating in ISCORD 2026.

Sapporo is a cold-region city that receives nearly five meters of snowfall annually, with the average temperature in January dropping to −3.2°C. However, this time of year offers some of the most pleasant and refreshing weather in Sapporo.

This symposium features keynote lectures by four distinguished experts, as well as more than 50 technical and research presentations. Through exchanges that transcend countries, regions, and generations, we hope that ISCORD 2026 will serve as a new starting point for envisioning a sustainable future for cold regions together.

Event Overview

Theme Building a Sustainable Future for the Cold Regions: Next Generation Innovations

Date July 7(Tue.)-10(Fri.), 2026

Venue 【Main】Sapporo Education and Culture Hall (Sapporo Kyoiku Bunka Kaikan), Sapporo, JAPAN
【Welcome Party／Lunch】Sapporo Prince Hotel, Sapporo, JAPAN

Organizer ISCORD 2026 Organizing Committee

Sponsors Hokkaido Development Engineering Center
Hokkaido Road Management Engineering Center

Supporters

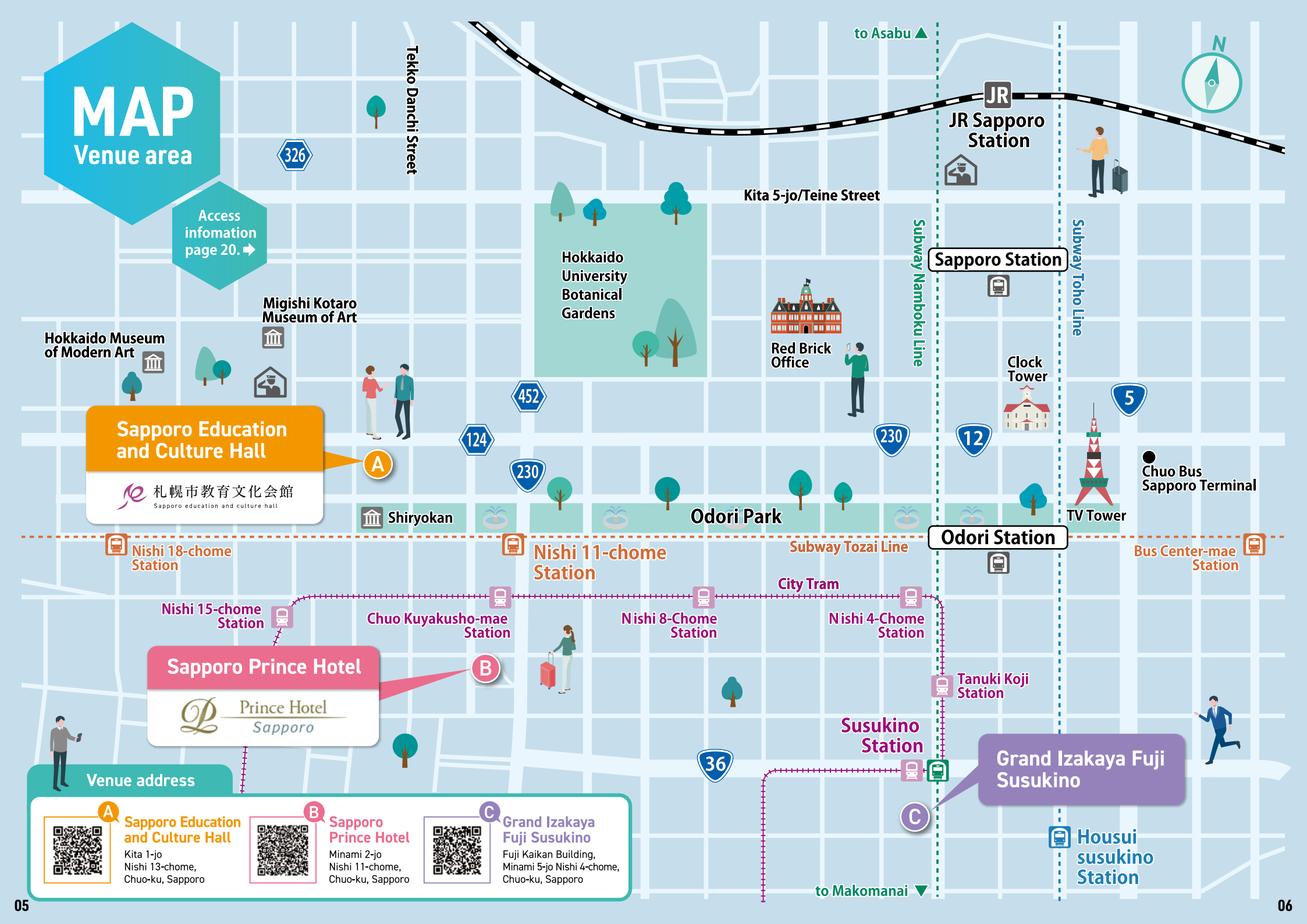
- Hokkaido Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism
- Hokkaido District Transport Bureau, Ministry of Land, Infrastructure, Transport and Tourism
- Hokkaido Prefectural Government
- City of Sapporo
- Hokkaido University
- Iwate University
- Hokkaido University of Science
- Civil Engineering Research Institute for Cold Region (CERI)
- National Research Institute for Earth Science and Disaster Resilience (NIED)
- Hokkaido Research Organization (HRO)
- Snow Research Center
- Japan Weather Association Hokkaido Regional Office
- The Japanese Society of Snow and Ice (JSSI)
- The Japanese Society for Snow Engineering (JSSE)
- Hokkaido Branch, Japan Society of Civil Engineers (JSCE)
- East Nippon Expressway Company Limited (NEXCO East) Hokkaido Regional Head Office

ISCORD2026 Overall Program

Day	Time	Details				Venue
July 7 (Tue)	15:00-17:30	IACORDS Board Meeting				Sapporo Education and Culture Hall A
	17:30-18:30	Registration				Sapporo Prince Hotel B
	18:30-20:30	**Welcome Party**				
July 8 (Wed)	9:00-10:00	Registration				Sapporo Education and Culture Hall A
	10:00-10:30	**Opening Ceremony**				
	10:30-11:10	**Keynote 1**	Professor Kazuei Ishii	Graduate School of Engineering, Hokkaido University	Technical Exhibition	
	11:10-11:50	**Keynote 2**	Mr. Yuji Abe	City Development Policy Planning Bureau, City of Sapporo		
	11:50-13:20	Lunch time				Sapporo Prince Hotel B
	13:20-14:40	**Sessions 1** Frozen Ground and Permafrost (1)	**Sessions 2** Infrastructure in the Frozen Environment	**Sessions 3** Smart and Digital Solutions		Sapporo Education and Culture Hall A
	14:40-15:05	Coffee Break				
	15:05-16:25	**Sessions 4** Geotechnics and Geoinformatics	**Sessions 5** Transportation Systems			
July 9 (Thu)	8:50-9:20	Registration			Technical Exhibition	Sapporo Education and Culture Hall A
	9:20-10:00	**Keynote 3**	Professor Askar Zhussupbekov	The L.N.Gumilyov Eurasian National University, Astana		
	10:00-10:40	**Keynote 4**	Dr. Shin-ei Takano	President of Safe and Wellbeing Winter Living Council		
	10:40-11:05	Coffee Break				
	11:05-12:25	**Sessions 6** Frozen Ground and Permafrost (2)	**Sessions 7** Innovative Engineering Solutions	**Sessions 8** Urban Snow Management and Winter Life		
	12:25-13:55	Lunch time				Sapporo Prince Hotel B
	13:55-15:15	**Sessions 9** Road Maintenance (1)	**Sessions 10** Natural Disaster in Cold Regions			Sapporo Education and Culture Hall A
	15:15-15:40	Coffee Break				
	15:40-17:00	**Sessions 11** Road Maintenance (2)	**Sessions 12** Road Engineering			
	17:00-17:20	**Closing Ceremony**				
	19:00-20:30	**Banquet**				Grand Izakaya Fuji Susukino C
July 10 (Fri)		**Excursion (Technical Visit)**				

MAP
Venue area

Access infomation page 20. ➡



Venue address

A Sapporo Education and Culture Hall
Kita 1-jo
Nishi 13-chome,
Chuo-ku, Sapporo

B Sapporo Prince Hotel
Minami 2-jo
Nishi 11-chome,
Chuo-ku, Sapporo

C Grand Izakaya Fuji Susukino
Fuji Kaikan Building,
Minami 5-jo Nishi 4-chome,
Chuo-ku, Sapporo

Keynote

Sapporo Education and Culture Hall
1st floor Small Hall

Keynote 1 July 8, 10:30-11:10

Professor Kazuei Ishii
Hokkaido University, Japan

Creating a Sustainable Future by Regional Circular Economy

For the creation of a sustainable society, biomass, such as cow manure, food waste, and sewage sludge, should be effectively used according to regional conditions. I address the concept of circular economy and a case study on biomass utilization in Hokkaido, Japan.

Keynote 2 July 8, 11:10-11:50

Mr. Yuji Abe
City Development Policy Planning Bureau, City of Sapporo, Japan

Well-Moving City SAPPORO 2045 Vision: Shaping a City Where People and Hearts Move Together

This keynote introduces the Well-Moving City SAPPORO 2045 Vision, developed by the City of Sapporo, one of the world's leading winter cities. Addressing mobility and quality-of-life challenges in snowy conditions, the presentation shares a future vision and strategic direction for creating a city where people and hearts move together.

Keynote 3 July 9, 9:20-10:00

Professor Askar Zhussupbekov
The L.N. Gumilyov Eurasian National University, Astana, Kazakhstan

Technology of pile foundations construction in winter season by using chemical anti frosty additives in soils

The design, construction, and maintenance of pile foundations are dependent on special weather conditions in Northern and Central part of Kazakhstan. The winter months in these areas are very long which starts from November to March and the air temperature usually reaches -20°C -30°C. These circumstances lead to the seasonal freezing ground, special physical behavior of soil, physical properties of construction materials. The main problem of pile driving in winter is frozen ground which difficulty to excavate and drive. Moreover, the Static Load Tests for estimating the bearing capacity of pile foundations do not show accurate records in frozen soil. To solve the problems mentioned above, a special antifreeze composition has been developed and established its protective effect against soil freezing in winter. The implementation of the proposed method leads to a high productivity of driving reinforced concrete piles without the risk of their destruction.

Keynote 4 July 9, 10:00-10:40

Dr. Shin-ei Takano
President of Safe and Wellbeing Winter Living Council, Japan

The Current Situation of Slip-and-Fall Accidents on Icy Sidewalks in Sapporo and Efforts by the Safe and Wellbeing Winter Living Council

In Sapporo, nearly 2,000 people are transported by ambulance each year due to falls on icy sidewalks. This is a major issue in Hokkaido.
This presentation will discuss the current situation, analyze these issues, and introduce the activities of the Safe and Wellbeing Winter Living Council.

Presentation Program

【Venue】Sapporo Education and Culture Hall A

July 8,Wed 13:20–14:40

Session 1 Frozen Ground and Permafrost (1) — Small hall, 1st floor

1. **Study on the Strength Characteristics and Freeze-Thaw Resistance of Cement-Stabilized Soil under Subzero Curing Conditions**
   Haoming Ren, School of Transportation, Southeast University, China
2. **Permafrost Thaw Strain Prediction: Empirical Methods vs. Machine Learning Models**
   Joey Yang, University of Alaska Anchorage, U.S.A
3. **Assessing Permafrost Thaw under Environmental Disturbance: Insights from Field Surveys and Numerical Simulations**
   Shunji Kanie, Hokkaido University of Science, Japan
4. **Investigation of Water Blocking Performance of Hydrophobically Modified Subgrade Soil under freeze-thaw environment**
   Daoju Ren, Harbin Institute of Technology, China

Session 2 Infrastructure in the Frozen Environment — Lecture hall, 4th floor

1. **Possibility of visualization of greenhouse gases in cold regions**
   Tomoro Kagawa, NAGOYA ELECTRIC WORKS CO., LTD., Japan
2. **Estimation of Subsurface Interface Depths within the Active Layer using Ground Penetrating Radar and Time Domain Reflectometry**
   Jong-Sub Lee, Korea University, Republic of Korea
3. **Deformation of Geotextile-Reinforced Soil Walls Due to Frost Heave, and Deformation Countermeasures**
   Atsuko Sato, Civil Engineering Research Institute for Cold Region , Japan

Session 3 Smart and Digital Solutions — Room 403, 4th floor

1. **A Note on Detecting Non-normal Driving Vehicles in Summer and Winter Using a Classifier Trained Only on Normal Traffic Videos**
   Shoichiro Imoto, Graduate School of Engineering, Hokkaido University, Japan
2. **A Note in Detecting Delay Section on Winter Roads**
   Shusei Maeda, Graduate School of Engineering, Hokkaido University, Japan
3. **Innovative Weather-Driven Warning and Pilot Services for Heavy-Duty Vehicles**
   Marjo Hippi, Finnish Meteorological Institute, Finland

July 8,Wed 15:05-16:25

Session 4 Geotechnics and Geoinformatics — Small hall, 1st floor

1. **Case Study: Wastewater System Failures, Anderson, Alaska, USA**
   Daniel Nichols, Kuna Engineering, U.S.A
2. **Determining geotechnical parameters for circular economy-based materials in cold climates**
   Anne Tuomela, University of Oulu, Finland
3. **Practical experience in Applying Vibration Monitoring for Pile Driving Operations**
   Gulshat Tleulenova, L.N. Gumilyov Eurasian National University, Kazakhstan
4. **Variations of black carbon depositions in snow collected at 4 observation sites in Hokkaido during the 2024-2025 winter**
   Satoru Mimura, Hokkaido Research Organization (HRO), Japan

Session 5 Transportation Systems — Lecture hall, 4th floor

1. **A method to estimate visibility ranges from live camera images by image processing without using camera specification information**
   Taisei Usui, Faculty of Sustainable Design,University of Toyama, Japan
2. **Development of a Method for Calculating Areal Glide Velocity of Snow-Covered Slopes Using Image Analysis**
   Hiroshi Kamiya, East Japan Railway Company, Japan
3. **A Visibility Estimation Method on Blowing Snow using Meteorological Data and Providing Visibility Forecasts for Snowstorms**
   Masaru Matsuzawa, Civil Engineering Research Institute for Cold Region,PWRI, Japan

For Presenters :

- Presentation time: 15 min (12 min talk + 3 min Q&A)
- Show up 15 minutes before the session starts and move your PPT file to the on-site PC. An on-site staff will check if it would work.

Presentation Program

July 9,Thu 11:05 -12:25

Session 6 Frozen Ground and Permafrost (2)

Small hall, 1st floor

1. **Forecasting of the temperature regime during the life cycle of a secondary waste disposal facility**
   Ilia Bokov, Moscow State University of Civil Engineering, Russian Federation
2. **Thaw Settlement Characteristics of Deep Permafrost from the North Slope of Alaska**
   Joey Yang, University of Alaska Anchorage, U.S.A
3. **Stability Control of In-Ground LNG Tank Under Ground Freezing**
   EunChul Shin, Incheon National University, Republic of Korea

Session 7 Innovative Engineering Solutions

Lecture hall, 4th floor

1. **Study on Crystal Growth Using a Localized Cooling Probe in Radiative Ice Making Process**
   Masaya Tojo, Nagaoka University of Technology, Japan
2. **Forecast of changes in bearing capacity and settlement of the pile taking into account the global warming factor**
   Anastasiia Almakaeva, Moscow State University of Civil Engineering, Russian Federation
3. **Durability and degradation mechanism of EICP-treated sand under freeze–thaw cycles**
   Junling Si, Harbin Institute of Technology, China
4. **Development and Field Demonstration of a Transportable Snow Cooling System Using Stored Snow**
   Shoei Hara, Nagaoka University of Technology, Japan

Session 8 Urban Snow Management and Winter Life

Room 403, 4th floor

1. **Year-round Outdoor Sports in Cold Regions**
   Riitta Kamula, University of Oulu
2. **Construction and Effects of Winter Installation of Hump (Traffic Calming Device) in School Zone in Hokkaido**
   Hirofumi Yotsutsuji, Civil Engineering Research Institute for Cold Region (CERI), Japan
3. **Sustainable Operation of Road Snow-Melting Sprinklers**
   Takuru Fukuhara, Nagaoka University of Technology, Japan
4. **Reducing Pedestrian Slip Risk through a Weather-Based Warning System in Finland**
   Marjo Hippi, Finnish Meteorological Institute, Finland

【Venue】Sapporo Education and Culture Hall A

July 9,Thu 13:55 -15:15

Session 9 Road Maintenance (1)

Small hall, 1st floor

1. **Observation and Verification of an Internal Slide-type Collapse of a Snowbank Formed along a Median Strip of a Highway**
   Yukinobu Sugihara, Nexco-Engineering Niigata Co., Ltd., Japan
2. **Study on Extending the Service Life of Joints in Concrete Pavements in Snowy and Cold Regions**
   Keita Oba, Civil Engineering Research Institute for Cold Region, Japan
3. **An AI system to detect road conditions using smartphones for winter road management**
   Satoru Yamaguchi, Snow and Ice Research Center, NIED, Japan
4. **Introduction of Snowdrift Model Operated by Wind from Lattice Boltzmann method (SMOWL)**
   Seika Tanji, Disaster Prevention Research Institute, Kyoto University, Japan

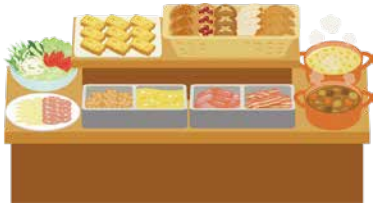
Session 10 Natural Disaster in Cold Regions

Lecture hall, 4th floor

1. **Three-Dimensional Material Point Modeling of Snow Avalanches and Infrastructure Impact**
   Hao Zheng, Harbin Institute of Technology, China
2. **Wind tunnel experiments on snowdrift shape over time on snow fences**
   Hidechika Ueno, Civil Engineering Research Institute for Cold Region, PWRI, Japan
3. **A Study on the Impact of Road Traffic caused by Tsunami Disasters under the Tohoku Road Clearance Plan**
   Masaaki Minami, Iwate University, Japan

Lunch : Sapporo Prince Hotel

- Please show your name badge.
- Buffet lunch will be served on both days.



Presentation Program

July 9,Thu 15:40 -17:00

Session 11 Road Maintenance (2)

Small hall, 1st floor

1 **Strengthening technology for composite steel structure foundations applicable to roads in permafrost regions**
Hongliang Zhang, Central Iron & Steel Research Institute Co., Ltd., China

2 **A Study on the Formation Process of Spontaneous Corrugation on Snow- and Ice-Covered Roads**
Ui Kitano, Hokkaido University of Science , Japan

3 **Study of a Method for Estimating Shape of Snowbanks at the Shoulders**
Haruhiko Murata, Civil Engineering Research Institute for Cold Region, PWRI, Japan

4 **Development of a Road Obstacle Alert Smartphone App for Snow-Removal Vehicle Operators**
Mitsuru Yamada, Civil Engineering Research Institute for Cold Region, Japan

Session 12 Road Engineering

Lecture hall, 4th floor

1 **Cooling of Newly Paved Surface Using Snow**
Keita Yamada, Nagaoka University of Technology, Japan

2 **Study on Weather Conditions under Which Potholes Forms in Cold Regions**
Kimio Maruyama, Civil Engineering Research Institute for Cold Region, Japan

3 **A High-Power Laser Snow-Melting System for Ice Management on Road Structures**
Toshimitsu Sakurai, Civil Engineering Research Institute for Cold Region, PWRI, Japan

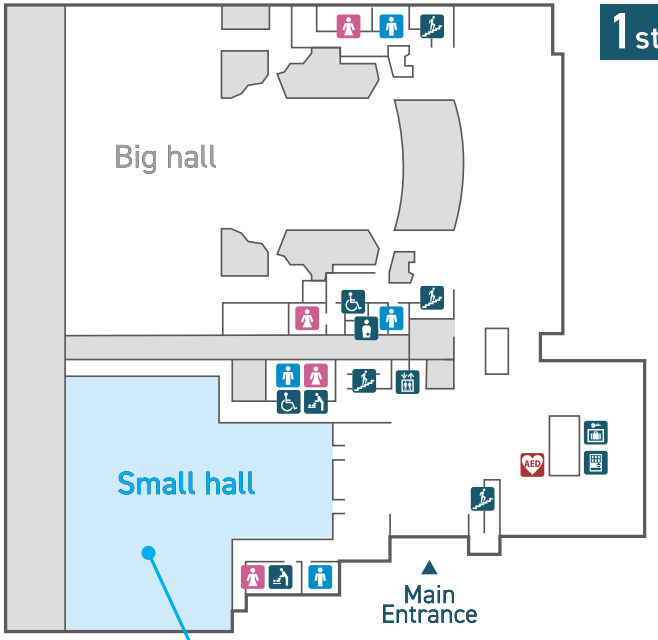
4 **Assessment of the Need to Update Frost Design of Road Pavements in Finland**
Essi Kautto, University of Oulu, Finland

Coffee Break : Room 401

- Coffee, other beverages and Hokkaido sweets are available.
- This room also features the Technical Exibition.

Floor map Sapporo Education and Culture Hall

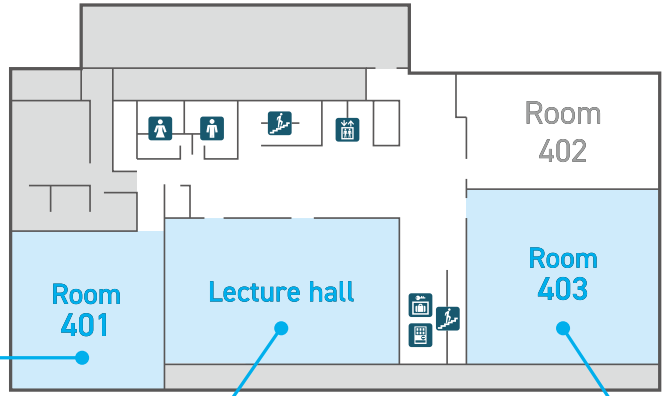
1st floor



- Men's Restroom
- Women's Restroom
- Accessible Restroom
- Ostomate-Friendly Restroom
- Baby Changing Station
- Elevator
- Stairs
- Vending Machine
- AED
- Coin Lockers

Opening Ceremony
Closing Ceremony
Keynote 1 ~ 4
Session 1 4 6 9 11

4th floor



Technical Exhibidion
For details about the exhibition, please refer to pages 15-19.

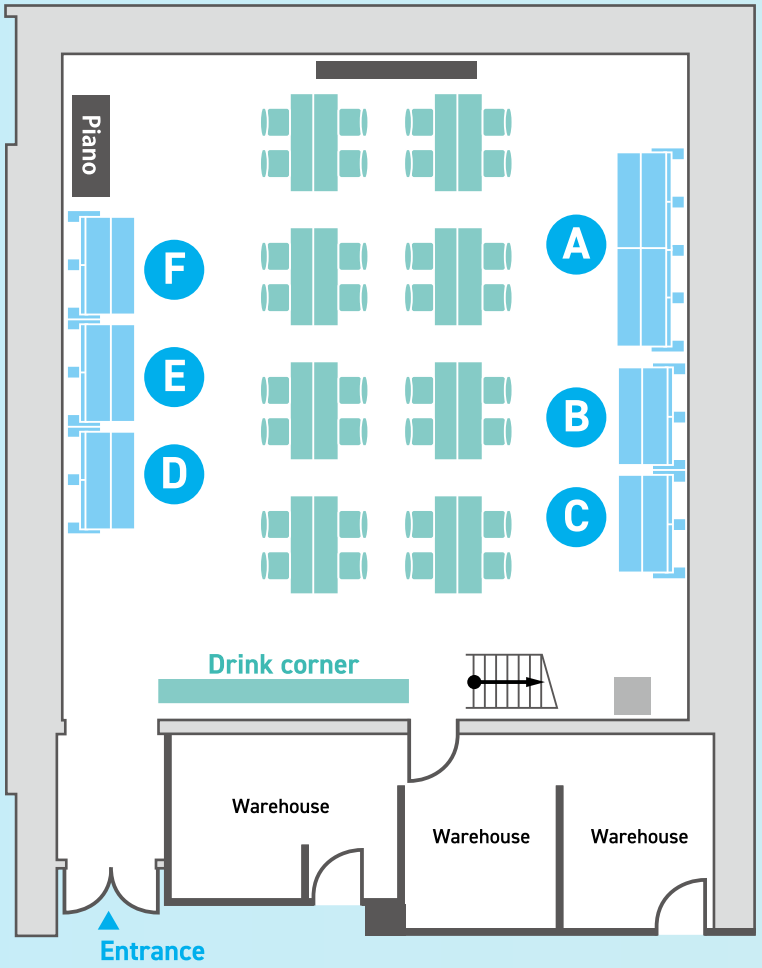
Coffee break room

Session 2 5 7 10 12

Session 3 8

Technical Exhibition

Sapporo Education and Culture Hall
4th floor Room 401

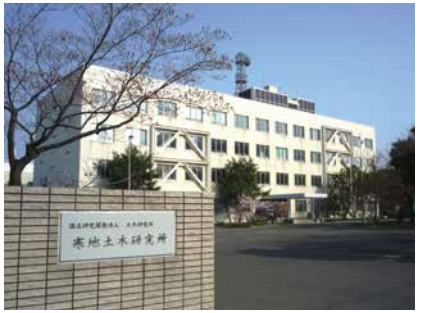


- **A** Civil Engineering Research Institute for Cold Region (CERI)
- **B** Kowa Co., Ltd.
- **C** YUKIKEN Snow Eaters Co., Ltd.
- **D** Iwasaki Co., Ltd.
- **E** Yamada Giken Co., Ltd.
- **F** SNOWTECH NIIGATA CO., LTD./CLIMATEC, Inc.

A Civil Engineering Research Institute for Cold Region (CERI)

Civil Engineering Research Institute for Cold Region (CERI) is Japan's only research institute devoted to civil engineering in snowy cold regions.
In this exhibit introduces

1. Overview of the Cold Region Civil Engineering Research Institute
2. Road Obstacle Alert Smart-phone App for Snow Removal Vehicle Operators
3. Pavement damage specific to snowy and cold regions
4. Visibility estimation technology and information system during snowstorms
5. The highway snowstorm countermeasure manual



Company Overview

Address Hiragishi 1-3-1-34, Toyohira-ku,Sapporo, Hokkaido, Japan

Tel +81-11-590-4046 **Website** https://www.ceri.go.jp/

B Kowa Co., Ltd.

株式会社 興和

Ensuring sustainable winter road access is essential to supporting daily life in heavy snowfall areas amid the impacts of climate change. Renewable-energy-based snow-melting systems and related technologies have been developed and implemented to address this challenge.
This exhibition showcases a Geothermal Heat-Pipe snow-melting system that requires no maintenance and incurs no operating costs.

Company Overview

Address 6-1 Shinko-cho, Chuo-ku, Niigata, Niigata, Japan
Tel +81-25-281-8816
Mail ans@kowa-net.co.jp **Website** https://www.kowa-net.co.jp/

C YUKIKEN Snow Eaters Co., Ltd.

株式会社雪研 SNOW EATERS

YUKIKEN Snow Eaters Co., Ltd. conducts research, studies, and consulting on snow-related phenomena. This exhibition showcases materials introducing our consulting services and our technologies (research, simulation).

Company Overview

Address 8F Dai-3 Santo Bldg. 5-6 Minami 2-jo Nishi 7-chome Chuo-ku, Sapporo, Hokkaido, Japan
Tel +81-11-272-3540 **Website** https://www.snow-eaters.com/

D Iwasaki Co., Ltd.

iwasaki

We are excited to introduce our latest Clear Drive®!
Designed to support driving in poor visibility conditions caused by snowstorms, so-called Whiteouts.
It offers video enhancement processing and AI-powered object detection technology.
Visit our booth to discover how we can add value to your business!

Company Overview

Address Higashi-2-1, Kita-4, Chuo-ku,Sapporo, Hokkaido,060-0034, Japan
Tel +81-11-252-2000 **Website** https://www.iwasakinet.co.jp

E Yamada Giken Co., Ltd.

Yamada Giken Co., Ltd. NEW TECHNOLOGY

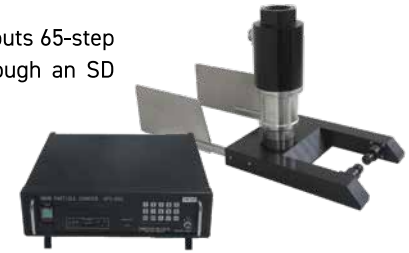
We manufacture the snow and ice instrumentation sensors to maintain winter roads, such as expressways and national roads.
This exhibit introduces models and brochures of Onboard Salinity Sensor System and Road Surface Sensor <ROAD EYE S>, which measures snow depth on main roads.

Company Overview

Address 5-12, 2-chome, Hanando-Minami, Fukui City, Fukui Pref. 918-8015, Japan
Tel +81-(0)776-36-0460 **Website** https://www.yamada-giken.co.jp

F SNOWTECH NIIGATA CO., LTD./CLIMATEC, Inc.

【SNOWTECH NIIGATA CO., LTD.】
The SPC-950 snow particle counter outputs 65-step data, exportable as 1-second data through an SD logger or USB-Micro B port.



【CLIMATEC, Inc.】 ※sales agency
Design, manufacturing, and sales of meteorological, hydrological, and civil engineering observation systems

Company Overview

Address Inside 1-3535-41 Sawada, Nagaoka City, Niigata 940-1101, Japan

Tel +81-258-31-8220 Website https://stniigata.com

Excursion

Day : July 10, 2026
Gathering point : Chuo Bus Sapporo Terminal (9:00)

9:15	Departure
9:30	Civil Engineering Research Institute for Cold Region
11:15	Lunch / Milk Villege Barbecue House
13:30	MOERENUMA PARK
15:30	NEXCO EAST(Hokkaido Regional Heald Office Traffic Control Center)
17:15	Arrival

Banquet

Date & Time : July 9 (Thu), 2026, 19:00–20:30
Place : Grand Izakaya Fuji Susukino C

Enjoy Hokkaido specialties, fresh seafood, and local drinks at a historic izakaya in Susukino, Sapporo's famous entertainment district.

Access

■Use the **Subway**

T09 Tozai Line Odori Station → time : 2min. Adults : 210yen → T08 Tozai Line Nishi 11-chome Station

T08 → Walking : 7min. → Sapporo Education and Culture Hall A
T08 → Walking : 7min. → Sapporo Prince Hotel B

■Use the **City Tram**

SC01 Nishi 4-chome Station (Inner loop) → time : 7min. Adults : 230yen → SC03 Chuo Kuyakusyo-mae Station

SC03 → Walking : 8min. → Sapporo Education and Culture Hall A
SC03 → Walking : 4min. → Sapporo Prince Hotel B

Travel time between the conference hall and Sapporo Prince Hotel

A → Walking : 10min. → B

Past ISCORD Conferences

1st	Sapporo, Japan	1983
2nd	Harbin, China	1988
3rd	Edmonton, Canada	1991
4th	Espoo, Finland	1994
5th	Anchorage, Alaska, U.S.A.	1997
6th	Hobart, Australia	2000
7th	Sapporo, Japan	2004
8th	Tampere, Finland	2007
9th	Yakutsk, Russia	2010
10th	Anchorage, Alaska, U.S.A.	2013
11th	Incheon, Korea	2016
12th	Oulu, Finland	2019
13rd	Harbin, China	2023
14th	**Sapporo, Japan**	**2026**

Light from the North

By bringing together wisdom and technology
from various fields, we will contribute
to the future of Hokkaido and the world
through cold-climate development technology
and international exchange.

Contracted Projects

In line with our founding mission to promote the advancement of cold-region development technologies and contribute to the prosperity of the international community, we undertake and implement projects in areas such as roads, transportation, environment, tourism, education, disaster prevention, and international cooperation.

Independent Initiatives

We conduct a wide range of activities, including research and development projects aimed at advancing cold-region technologies, as well as public relations and international exchange programs such as symposiums and conferences.

一般社団法人 北海道開発技術センター

Hokkaido Development Engineering Center

President : Shin-ei TAKANO
Director General : Kou HASHIMOTO
Established : 1983

Central Sapporo Kita Bldg.
2-17, North11, West2, Kita-ku, Sapporo
Hokkaido, 001-0011, JAPAN
TEL : +81-11-738-3361
URL: https://decent.or.jp