

8.00	Registration opens
9.00	OPENING SESSION Chaired by Riitta Kamula WELCOME BY UNIVERSITY OF OULU Coordinator, IACORDS Vice Chair, Riitta Kamula, University of Oulu WELCOME BY IACORDS President Shunji Kanie, Hokkaido University Founder of ISCORD/IACORDS, Harumi Sasaki
9.30	KEYNOTE 1 HUMAN HEALTH IN THE CHANGING CLIMATE Adj. Professor Khaled Abass Arctic Health, Faculty of Medicine, University of Oulu, Finland
10.00	KEYNOTE 2 SUSTAINBLE RESOURCE USE IN A COASTAL CONSTRUCTION Professor Eun Chul Shin, Dept. of Civil and Environmental Engineering, Incheon National University, Republic of Korea

ISCORD

12TH SYMPOSIUM ON COLD REGIONS DEVELOPMENT

JUNE 17, 2019

OULU, FINLAND – ISCORD2019.COM



WEBSITE



POSTERS

10.30 **Coffee and poster exhibition**

11.00 **ENVIRONMENT AND SOCIETY**

TRAFFIC SAFETY IN COLD REGIONS

11.00	CLIMATE CHANGE AND ASSESSMENT OF ITS IMPACT ON THE ENGINEERING DESIGN PARAMETERS FOR INFRASTRUCTURE IN NORTHERN ALASKA Prof. Joey Yang (University of Alaska Anchorage)	CASE STUDIES FOR TRAFFIC SAFETY MEASURES IN COLD REGIONS Prof. Hannele Zubeck (University of Alaska Anchorage)
11.15	IMPORTANCE OF DETAILED SOIL, TERRAIN AND GEOHAZARD DATA FOR COLD REGION DEVELOPMENT - HOW DO WE GET THIS KIND OF DATA? Mr. Dennis O'Leary (Golder Associates Ltd.)	STUDY ON EFFECTS OF SALT SPREADING DECISION AND OPERATION SUPPORT TOOLS ON OPERATOR PERFORMANCE Dr. Roberto Tokunaga (Civil Engineering Research Institute for Cold Region, PWRI)
11.30	REGIONAL DISASTER MANAGEMENT PRACTICE AFTER A TSUNAMI DISASTER Prof. Masaaki Minami (Iwate University)	BASIC EXPERIMENT RELATED TO TECHNOLOGY TO DETECT SURROUNDINGS OF A SNOWPLOW USING A MILLIMETER-WAVE RADAR DEVICE UNDER VISIBILITY HINDRANCE Mr. Takahiro Shimbo (Civil Engineering Research Institute for Cold Region, PWRI)
11.45	HISTORY OF COLD WEATHER PAVING IN HOKKAIDO, JAPAN - A CASE OF THE DEVELOPMENT OF NATIONAL HIGHWAY RT.36 Dr. Masato Haraguchi (Hokkaido Development Engineering Center)	PROPOSE EFFICIENT SNOW REMOVAL SYSTEM OF SAPPORO BY DATA ENVELOPMENT ANALYSIS Dr. Kunihiro Kishi (Hokkaido University)
12.00		BUSINESS ECOSYSTEM ANALYSIS OF A VEHICULAR ROAD WEATHER INFORMATION SYSTEM Mr. Toni Lusikka (VTT Technical Research Centre of Finland Ltd.)
12.15		VISIBILITY ESTIMATION METHOD BASED ON IMAGES ON THE INTERNET Dr. Yasuhiro Nagata (Hokkaido Development Engineering Center)

12.30 **Lunch and poster exhibition**

13.30 **ENERGY - OIL AND GAS**

FROZEN GROUND AND PERMAFROST

13.30	SUSTAINABLE ENERGY FOR A SECURE AND AFFORDABLE ENERGY SUPPLY Mr. Magnus de Witt (Reykjavik University)	EXPERIMENTAL STUDY OF INFLUENCE FACTORS EFFECT ON FROST HEAVE Mr. Hyunwoo JIn (Korea University of Science and Technology)
13.45	APPLICATION OF BRINE ELECTROLYSIS PROCESS IN ENHANCED OIL RECOVERY Dr. Yahui Zhang (Memorial University of Newfoundland)	THERMAL AND MOISTURE DISTRIBUTION OF SUBGRADE EFFECTED BY THE FREEZING Dr. Feng Zhang (Harbin Institute of Technology)
14.00	SIMULATING OIL SPILL ACCIDENTS WITH OPENDRIFT: CASES OF THE BARENTS AND KARA SEAS Victor Pavlov (University of Oulu)	COMPARISON OF FIELD DATA AND NUMERICAL MODELLING OF PILES IN SEASONALLY FREEZING SOILS Prof. Askar Zhussupbekov (L.N. Gumilyov Eurasian National University)
14.15		BEARING CAPACITY OF STEEL PILE IN CLAYEY SAND UNDER FREEZING TEMPERATURE Prof. Eunchul Shin (Incheon National University)

14.30 **Coffee and poster exhibition**

15.15 **EDUCATION AND TRAINING**

FROZEN GROUND AND PERMAFROST

15.15	WHAT DO ENGINEERS NEED TO CONSIDER WHEN DESIGNING FOR ARCTIC? Prof. Hannele Zubeck (University of Alaska Anchorage)	ELASTOPLASTIC MODELING OF WELL CASING SUBSIDENCE IN THAWING PERMAFROST Prof. Joey Yang (University of Alaska Anchorage)
15.30	EDUCATING ENGINEERS IN GREENLAND Dr. Pernille Erland Jensen (Tec)	STUDY ON THE PERMEABILITY OF UNFROZEN PART OF SOILS IN ARTIFICIAL GROUND FREEZING Dr. Go Hirose (Okumura Engineering Corporation)
15.45	STRENGTHENING ARCTIC ENGINEERING COMPETENCES THROUGH HIGHER EDUCATION – THE NORDIC MASTER IN COLD CLIMATE ENGINEERING Dr. Gunvor Marie Kirkelund (Technical University of Denmark)	STUDY ON THE UNFROZEN WATER CONTENT TO UNDERSTAND THE ENGINEERING PROPERTIES OF SATURATED FINE-GRAINED SOILS Mr. Kosuke Tsukamoto (Setsunan University)
16.00	SCIENCE WITH ARCTIC ATTITUDE: DOCTORAL TRAINING IN THE UNIVERSITY OF OULU Dr. Riitta Kamula (University of Oulu)	THE IDENTIFICATION OF ICE LENS GROWING PATTERN IN FREEZING SOIL BY IMAGE PROCESSING METHOD Prof. Shunji Kanie (Hokkaido University)

16.15 **Poster Session and exhibition**

19.00 **City Reception**

Guided walk from the venue at 18.30.

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JUNE 18, 2019

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WEBSITE



POSTERS

8.00	Registration opens
9.00	KEYNOTE 3 POLAR ANIMALS AND PLANTS IN A WARMING WORLD Emeritus Fellow Andrew Clark British Antarctic Survey, Cambridge, England
9.30	KEYNOTE 4 CHALLENGES IN ARCTIC ENGINEERING Professor Hannele K. Zubeck University of Alaska Anchorage, Anchorage, USA
10.00	KEYNOTE 5 ARCTIC MARINE SUSTAINABILITY: A WICKED PROBLEM Professor Eva Pongrácz University of Oulu, Finland

10.30 Coffee and poster exhibition

11.00 INFRASTRUCTURE

11.00	EXPERIMENT TO REDUCE THE FROST-HEAVING OF SLOPE SURFACES USING VEGETATION BASE Dr. Atsuko Sato (Civil Engineering Research Institute for Cold Region)
11.15	BIOLOGICAL ACTIVATED CARBON FILTRATION IN CONTAMINATED WATER TREATMENT USING TWO ACTIVATED CARBONS AT CASEY STATION, ANTARCTICA Mr. Jack Churchill (The University of Melbourne)
11.30	GRANULATED FERROCHROME SLAG'S CAPASITY TO RESIST RESILIENT DEFORMATIONS Mrs. Laura Raerinne (Destia Oy)
11.45	VALORISATION OF GREENLANDIC MSWI BOTTOM ASH AS SAND SUBSTITUTE IN MORTAR Dr. Gunvor Marie Kirkelund (Technical University of Denmark)
12.00	TASKS AND TECHNICAL DEVELOPMENTS TOWARD THE SHALLOW UNDERGROUNDING OF UTILITY LINES IN COLD REGIONS Mr. Keisuke Iwata (Civil Engineering Research Institute for Cold Region, PWRI)
12.15	NEW FINNISH GUIDELINE ON FROST PROTECTION Dr. Seppo Saarelainen (Aalto University/Tmi Roussa)

CONSTRUCTION TECHNOLOGIES

ULTIMATE THEORETICAL SPAN LENGTHS OF SNOW AND ICE ARCHES AND VAULTS Mr. Esko Järvenpää (University of Oulu, WSP Finland)
LESSONS FROM A FIBRE COMPOSITE BUILDING IN ANTARCTICA Mr. Mark Pekin (Australian Antarctic Division)
HOW BUILDING DESIGN CAN ADVERSELY AFFECT THE IMPACTS OF COLD CLIMATE STACK EFFECT IN TALL BUILDINGS? Mr. Steven Attrill (RWDI)
BASIC STUDY ON MECHANISM OF FROST DAMAGE TO BRICKS IN COLD REGIONS Dr. Dai Nakamura (Kitami Institute of Technology)
STRESS ANALYSIS AND CALCULATION OF PILE FOUNDATION CAUSED BY THE LAKE ICE Prof. Jiliang Wang (Heilongjiang Province Academy of Cold Area Building Research)
PERFORMANCE OF LEAD RUBBER BEARING SEISMICALLY ISOLATED BRIDGES IN COLD REGIONS Dr. Wael Hassan (University of Alaska Anchorage)

12.30 Lunch and poster exhibition

13.30 ROAD CONSTRUCTION AND MAINTENANCE

13.30	SURFACE SOFTENING ON GRAVEL ROADS Mr. Jaakko Nurmi (Destia Oy)
13.45	DEVELOPMENT OF SUSTAINABLE BINDER FOR CONCRETING IN THE ARCTIC REGION Dr. Katja Ohenoja (University of Oulu)
14.00	FORMATION MECHANISM OF SPONTANEOUS CORRUGATION ON ROAD SURFACE DUE TO MOVING VEHICLES Prof. Shunji Kanie (Hokkaido University)
14.15	PEHKO PROJECT - IMPLEMENTING ROAD EX RECOMMENDATIONS FOR RURAL ROAD ASSET MANAGEMENT IN FINLAND Dr. Timo Saarenketo (Roadscanners Oy)

SPECIAL ISSUES - SNOW AND ICE

WINTERTIME SLIP INJURIES COMPARED TO WEATHER Ms. Marjo Hippel (Finnish Meteorological Institute)
EFFORTS TO FORECAST ICY ROAD SURFACE SLIPPERINESS LEVELS IN WINTER IN SAPPORO, HOKKAIDO, JAPAN Mr. Fumiyoshi Kawamura (Japan Weather Association)
A STUDY ON EVALUATION METHOD OF FALL OVER RISK IN WINTER WALKWAY USING SMARTPHONES Dr. Akira Saida (Civil Engineering Research Institute for Cold Region)
INBOUND TOURISM DEVELOPMENT IN COLD REGIONS-A CASE OF HOKKAIDO, JAPAN Ms. Ayami Saga (Hokkaido Development Engineering Center)

14.30 Coffee

15.00 CLOSING

ANNOUNCEMENT OF ISCORD 2022

15.40–17.30 Self-guided walking tour

19.00 Dinner

Bus transportation from the venue at 18.30.

JUNE 19, 2019

EXCURSION TO KEMI SNOW CASTLE

Excursion takes the participants to the Kemi Snow Castle - the SnowExperience365, which welcomes to winter wonderland every day of the year. Amazing snow and ice sculptures decorate the snowy walls in icy surroundings also in summertime.

EXCURSION STARTS FROM HOTEL LASARETTI AT 8.30 AM. RETURN TO OULU AIRPORT (VIA OULU CITY CENTRE) AT 16.00 PM