

## POAC'11- Program Overview

### Sunday 17.00 Registration/POAC Icebreaker

Sunday July 10 17.00 -19.00

Room: Zen Room

### Monday 9.00 Opening Ceremony

Monday July 11 9.00 – 9.30

Room: Salon Des Saisons A  
Chair: Ivana Kubat

### Monday 9.30 Keynote Lecture 1

Monday July 11 9.30 – 10.00

Room: Salon Des Saisons A  
Chair: Ivana Kubat

#### MANAGEMENT OF OIL AND GAS ACTIVITIES IN CANADA'S NORTH AND ASSOCIATED RESEARCH

Geneviève Carr

Indian and Northern Affairs Canada

### Monday 10.20 Parallel sessions

Paper ID

#### 12.1 INNOVATIONS IN NAVIGATION AND SHIPPING IN ICE-COVERED WATERS

Room: Salon Des Saisons A  
Chair: Barb O'Connell

POAC11-088  
10.20-10.40

##### THE INTERIM RESULTS OF THE LONG-TERM ICE LOADS MONITORING ON THE LARGE ARCTIC TANKER

Aleksandr Iyerusalimskiy<sup>1</sup>, Jaewoong Choi<sup>1</sup>, Gunil Park<sup>1</sup>, Youngsung Kim<sup>2</sup>, Han Yu<sup>3</sup>, James St. John<sup>4</sup>

<sup>1</sup>ConocoPhillips, Houston, United States

<sup>2</sup>Samsung Heavy Industries Co. Ltd., South Korea

<sup>3</sup>ABS, Houston, United States

<sup>4</sup>Science and Technology Corporation, Hampton, United States

POAC11-151  
10.40-11.00

##### INVESTIGATIONS OF VARIABILITY FOR SHIP NAVIGATION THROUGH THE NORTHWEST PASSAGE, 1982-2010

Todd D. Mudge<sup>1</sup>, David B. Fissel<sup>1</sup>, Mar Martínez de Saavedra Álvarez<sup>1</sup>, John. R. Marko<sup>1</sup>

<sup>1</sup>ASL Environmental Sciences Inc, Victoria, Canada

POAC11-157  
11.00-11.20

##### POLAR VIEW: INNOVATIVE INFORMATION SERVICES TO SUPPORT NAVIGATION IN ICE-INFESTED WATERS

T.M. Puestow<sup>1</sup>, D. Power<sup>1</sup>, P. Adlakha<sup>1</sup>

<sup>1</sup>C-CORE, St. John's, Canada

POAC11-181  
11.20-11.40

##### ICE RESPONSE MONITORING USING STRUCTURAL MONITORING SYSTEMS

Geir Sagvolden<sup>1</sup>, Karianne Pran<sup>1</sup>

<sup>1</sup>Light Structures AS, Oslo, Norway

POAC11-108  
11.40-12.00

##### THE ICE FIELD TESTS OF KOREAN ICEBREAKING RESEARCH VESSEL

Chun-Ju Lee<sup>1</sup>, Seong-Yeob Jeong<sup>1</sup>, Hyun-Soo Kim<sup>2</sup>

<sup>1</sup>Maritime & Ocean Engineering Research Institute, Daejeon, Korea

<sup>2</sup>Inha Technical College, Incheon, Korea

POAC11-082  
12.00-12.20

##### REMOTE SENSING SUPPORT OF CRUISE VESSELS IN THE ARCTIC

M. Kapfer<sup>1</sup>, T. Hirose<sup>1</sup>, J. Bennett<sup>1</sup>

<sup>1</sup>Noetix Research Inc., Ottawa, Canada

Paper ID

#### 11.1 PORTS IN COLD CLIMATES

Room: Salon Printemps  
Chair: Robert Frederking

POAC11-129  
10.20-10.40

##### ICE ACTION ON A GEOBAG EMBANKMENT IN LANDFAST SEA ICE ON SVALBARD, NORWAY

Espen Østerås<sup>1,2</sup>, Jomar Finseth<sup>1,3</sup>, Knut V. Høyland<sup>1,2</sup>

<sup>1</sup>The University Centre in Svalbard, (UNIS), Spitsbergen, Norway

<sup>2</sup>The Norwegian University of Science and Technology (NTNU), Trondheim, Norway

<sup>3</sup>SINTEF, Building and Infrastructure, Trondheim, Norway



## POAC'11- Program Overview

- POAC11-117 14.10-14.30 **OFFSHORE PLATFORMS AND DETERMINISTIC ICE ACTIONS: KASHAGAN PHASE 2 DEVELOPMENT: NORTH CASPIAN SEA**  
Ken Croasdale<sup>1</sup>, Ian Jordaan<sup>2</sup>, Paul Verlaan<sup>3</sup>  
<sup>1</sup>K.R. Croasdale & Associates, Calgary, Canada  
<sup>2</sup>Ian Jordaan & Associates, St John's, Canada  
<sup>3</sup>Shell Development Kashagan, London, United Kingdom
- POAC11-133 14.30-14.50 **PROBABILISTIC MODELLING OF THE ICE ENVIRONMENT IN THE NORTHEAST CASPIAN SEA AND ASSOCIATED STRUCTURAL LOADS**  
Ian Jordaan<sup>1</sup>, Paul Stuckey<sup>2</sup>, Jim Bruce<sup>2</sup>, Ken Croasdale<sup>3</sup>, Paul Verlaan<sup>4</sup>  
<sup>1</sup>Ian Jordaan & Associates, St John's, Canada  
<sup>2</sup>C-CORE, St. John's, Canada  
<sup>3</sup>K.R. Croasdale & Associates, Calgary, Canada  
<sup>4</sup>Shell Development Kashagan, London, United Kingdom
- POAC11-002 14.50-15.10 **ICE ENCROACHMENT IN THE NORTH CASPIAN SEA**  
Richard McKenna<sup>1</sup>, Paul Stuckey<sup>2</sup>, Mark Fuglem<sup>2</sup>, Greg Crocker<sup>3</sup>, Dave McGonigal<sup>4</sup>, Ken Croasdale<sup>5</sup>, Paul Verlaan<sup>6</sup>, Ainur Abuova<sup>6</sup>  
<sup>1</sup>R.F. McKenna & Associates, Wakefield, Canada  
<sup>2</sup>C-CORE, St. John's, Canada  
<sup>3</sup>Ballicater Consulting, Kingston, Canada  
<sup>4</sup>D. McGonigal, Calgary, Canada  
<sup>5</sup>K.R. Croasdale & Associates, Calgary, Canada  
<sup>6</sup>Shell Development Kashagan, Brentford, Middlesex, United Kingdom

### Paper ID

## 1.1 ICE PROPERTIES

**Room:** Salon Printemps  
**Chair:** Knut Høyland

- POAC11-168 13.30-13.50 **VISCOELASTICITY, DAMAGE AND ICE BEHAVIOUR IN COMPRESSION**  
Ian J. Jordaan<sup>1,2</sup>, Rocky S. Taylor<sup>1</sup>  
<sup>1</sup>C-CORE, St. John's, Canada  
<sup>2</sup>Ian Jordaan and Associates, St. John's, Canada
- POAC11-023 13.50-14.10 **DEVELOPMENT OF ICE FAILURE AND YIELD CRITERIA FOR ACCIDENTAL LIMIT STATE DESIGN**  
Ekaterina Kim<sup>1</sup>, Jørgen Amdahl<sup>1</sup>, Sveinung Løset<sup>1</sup>  
<sup>1</sup>Norwegian University of Science and Technology, Trondheim, Norway
- POAC11-015 14.10-14.30 **SHEAR FAULTING AND THE ICE-STRUCTURE INTERACTION PROBLEM**  
Narayana Golding<sup>1</sup>, Erland M. Schulson<sup>1</sup>, Carl E. Renshaw<sup>2</sup>  
<sup>1</sup>Thayer School of Engineering, Dartmouth College, Hanover, United States  
<sup>2</sup>Department of Earth Science, Dartmouth College, Hanover, United States
- POAC11-007 14.30-14.50 **EXPERIMENTS ON THE RELATION BETWEEN FREEZEBOND AND ICE RUBBLE STRENGTH, PART I: SHEAR BOX EXPERIMENTS**  
Nicolas Serré<sup>1,2</sup>, Ada H. V. Repetto-Llamazares<sup>2</sup>, Knut V. Høyland<sup>2</sup>  
<sup>1</sup>NTNU, Department of Civil and Transport Engineering, Høgskoleringen, Norway  
<sup>2</sup>Barlindhaug Consult AS, Tromsø, Norway
- POAC11-019 14.50-15.10 **EXPERIMENTS ON THE RELATION BETWEEN FREEZE-BONDS AND ICE RUBBLE STRENGTH PART II: FREEZE-BOND EXPERIMENTS AND COMPARISON WITH NUMERICAL SIMULATIONS**  
Ada H. V. Repetto-Llamazares<sup>1</sup>, Knut V. Høyland<sup>1</sup>  
<sup>1</sup>Norwegian University of Science and Technology (NTNU), Trondheim, Norway

### Paper ID

## 2.2 ICE-STRUCTURE INTERACTION

**Room:** Salon Été  
**Chair:** Karen Muggeridge

- POAC11-004 13.30-13.50 **INTEGRATED NUMERICAL ANALYSIS OF ICEBERG COLLISIONS WITH SHIP SIDES**  
Zhenhui Liu<sup>1</sup>, Jørgen Amdahl<sup>1</sup>, Sveinung Løset<sup>2</sup>  
<sup>1</sup>Department of Marine Technology, Norwegian University of Science and Technology, Trondheim (NTNU), Norway  
<sup>2</sup>Department of Civil and Transportation Engineering, Norwegian University of Science and Technology, Trondheim (NTNU), Norway

## POAC'11- Program Overview

- POAC11-037 13.50-14.10 **NUMERICAL INVESTIGATION OF EFFECT OF CHANNEL CONDITION AGAINST SHIP RESISTANCE IN BRASH ICE CHANNELS**  
Akihisa Konno<sup>1</sup>, Osamu Saitoh<sup>1,2</sup>, Yuuki Watanabe<sup>1</sup>  
<sup>1</sup>Kogakuin University, Tokyo, Japan  
<sup>2</sup>Setsubi Consultants Co., Ltd., Tokyo, Japan
- POAC11-041 14.10-14.30 **PRODUCTION SHIP RESISTANCE TO ICEBERG IMPACT STUDY**  
S.L. Karlinsky<sup>1</sup>, V.A. Chernetsov<sup>1</sup>  
<sup>1</sup>PJSC, Central Design Bureau for Marine Engineering "RUBIN", St. Petersburg, Russia
- POAC11-035 14.30-14.50 **NUMERICAL INVESTIGATION OF THE ICE FORCE DISTRIBUTION AROUND THE SHIP HULL IN LEVEL ICE**  
Junji Sawamura<sup>1</sup>, Ryouhei Kikuzawa<sup>1</sup>, Takashi Tachibana<sup>1</sup>, Masaya Kunigita<sup>1</sup>  
<sup>1</sup>Department of Naval Architecture and Ocean Engineering, Osaka University, Osaka, Japan
- POAC11-163 14.50-15.10 **NUMERICAL SIMULATION OF SHIPS OPERATING IN LEVEL ICE**  
Biao Su<sup>1</sup>, Kaj Riska<sup>1,2</sup>, Torgeir Moan<sup>1</sup>  
<sup>1</sup>Centre for Ships and Ocean Structures, NTNU, Trondheim, Norway  
<sup>2</sup>ILS Oy, Helsinki, Finland

### Monday 15.30 Parallel sessions

- Paper ID**      **2.3 ICE-STRUCTURE INTERACTION**      **Room:** Salon Des Saisons A  
**Chair:** Michel Metge
- POAC11-165 15.30-15.50 **OVERVIEW OF THE MOLIKPAQ MULTI-YEAR ICE LOAD REANALYSIS 2007 JIP**  
Robert Frederking<sup>1</sup>, Kevin Hewitt<sup>2</sup>, Ian J. Jordaan<sup>3,4</sup>, Denise Sudom<sup>1</sup>, Jonathon Bruce<sup>4</sup>, Mark Fuglem<sup>4</sup>, Rocky S. Taylor<sup>4</sup>  
<sup>1</sup>Canadian Hydraulics Centre, National Research Council, Ottawa, Canada  
<sup>2</sup>K.J. Hewitt & Associates Ltd., Calgary, Canada  
<sup>3</sup>Ian Jordaan & Associates Inc., St. John's, Canada  
<sup>4</sup>C-CORE, St. John's, Canada
- POAC11-130 15.50-16.10 **RE-EVALUATION OF ICE LOADS AND PRESSURES MEASURED IN 1986 ON THE MOLIKPAQ STRUCTURE**  
Ian Jordaan<sup>1,2</sup>, Jonathon Bruce<sup>2</sup>, Kevin Hewitt<sup>3</sup>, Robert Frederking<sup>4</sup>  
<sup>1</sup>Ian Jordaan & Associates Inc., St. John's, Canada  
<sup>2</sup>C-CORE, St. John's, Canada  
<sup>3</sup>K. J. Hewitt & Associates Ltd., Calgary, Canada  
<sup>4</sup>Canadian Hydraulics Centre, National Research Council of Canada, Ottawa, Canada
- POAC11-149 16.10-16.30 **ESTIMATION OF THE PEAK IMPACT LOAD ON THE MOLIKPAQ BY A MULTI-YEAR FLOE ON MAY 12, 1986 BASED ON FLOE DECELERATION**  
Mark Fuglem<sup>1</sup>, Ian Jordaan<sup>1,2</sup>, Jonathon Bruce<sup>1</sup>  
<sup>1</sup>C-CORE, St. John's, Canada  
<sup>2</sup>Ian Jordaan and Associates, St. John's, Canada
- POAC11-134 16.30-16.50 **ICE LOADS ON THE MOLIKPAQ at AMAULIGAK I-65 BASED ON GEOTECHNICAL ANALYSES AND RESPONSES**  
Kevin Hewitt<sup>1</sup>  
<sup>1</sup>K.J. Hewitt & Associates Ltd., Calgary, Canada
- POAC11-189 16.50-17.10 **ICE LOAD MEASUREMENT ON MOLIKPAQ: METHODOLOGY AND ACCURACY**  
M. Jefferies<sup>1</sup>, B. Rogers<sup>2</sup>, M. Hardy<sup>2</sup>, B. Wright<sup>2</sup>  
<sup>1</sup>Klohn Crippen Berger, Calgary, Canada  
<sup>2</sup>Wright & Associates, Canmore, Canada
- POAC11-058 17.10-17.30 **THE EFFECT OF LOW PASS FILTERS IN THE MOLIKPAQ DATA ACQUISITION SYSTEM ON "PHASE LOCK" INTERACTION SIGNALS**  
Paul Spencer<sup>1</sup>, Tom Morrison<sup>1</sup>, Mike Jefferies<sup>2</sup>  
<sup>1</sup>Ausenco Sandwell, Calgary, Canada  
<sup>2</sup>Klohn Crippen Berger, Calgary, Canada

## POAC'11- Program Overview

<b>Paper ID</b>	<b>1.2 ICE PROPERTIES</b>	<b>Room: Salon Printemps Chair: Garry Timco</b>
POAC11-014 15.30-15.50	<b>EXPERIMENTAL INVESTIGATION OF FRICTION COEFFICIENT OF LABORATORY ICE</b> Lennart Fransson <sup>1</sup> , Aniket Patil <sup>2</sup> , Henrik Andren <sup>1</sup> <sup>1</sup> Luleå University of Technology, Luleå, Sweden <sup>2</sup> Northern Research Institute, Narvik, Norway	
POAC11-016 15.50-16.10	<b>FRICTION MODELLING IN ICE CRUSHING SIMULATION</b> Maria Tikanmäki <sup>1</sup> , Lasse Makkonen <sup>1</sup> , Juha Kurkela <sup>1</sup> <sup>1</sup> VTI Technical Research Centre of Finland, Espoo, Finland	
POAC11-008 16.10-16.30	<b>FIELD EXPERIMENTS ON ICE-ICE FRICTION</b> Sergiy Sukhorukov <sup>1,2</sup> , Sveinung Løset <sup>1,2</sup> <sup>1</sup> Norwegian University of Science and Technology, Trondheim, Norway <sup>2</sup> The University Centre in Svalbard (UNIS), Spitsbergen, Norway	
POAC11-148 16.30-16.50	<b>FIELD STUDIES OF SEA WATER AND ICE PROPERTIES IN SVALBARD FJORDS</b> A.Marchenko <sup>1</sup> , A. Shestov <sup>1</sup> , E.Karulin <sup>2</sup> , E. Morozov <sup>3</sup> , M. Karulina <sup>2</sup> , P. Bogorodsky <sup>4</sup> , S. Muzylev <sup>3</sup> , D. Onishchenko <sup>5</sup> , A. Makshtas <sup>4</sup> <sup>1</sup> The University Centre in Svalbard, Longyearbyen, Norway <sup>2</sup> Krylov Ship Building Research Institute, St.-Petersburg, Russia <sup>3</sup> Shirshov Institute of Oceanology of RAS, Moscow, Russia <sup>4</sup> Arctic and Antarctic Research Institute, St.-Petersburg, Russia <sup>5</sup> Gazprom VNIIGAZ LLC., Moscow, Russia	
POAC11-006 16.50-17.10	<b>A REVIEW ON THE DEVELOPMENT OF THE METHODS OF ICE AND ICE-SOIL REINFORCEMENT</b> N. K. Vasiliev <sup>1</sup> , A.A. Ivanov <sup>1</sup> , V.V. Sokurov <sup>1</sup> , I. N. Shatalina <sup>1</sup> , K. N. Vasilyev <sup>2</sup> <sup>1</sup> The B. E. Vedenev VNIIG, Saint Petersburg, Russia <sup>2</sup> Halcrow Group Ltd., Swindon, United Kingdom	
<b>Paper ID</b>	<b>4.1 OFFSHORE OPERATIONS: LOGISTICS AND ICE MANAGEMENT</b>	<b>Room: Salon Été Chair: Carrie Young</b>
POAC11-050 15.30-15.50	<b>ADVANCES IN ICE MANAGEMENT FOR DEEPWATER DRILLING IN THE BEAUFORT SEA</b> Bill Maddock <sup>1</sup> , Andy Bush <sup>2</sup> , Tom Wojahn <sup>1</sup> , Theodore Kokkinis <sup>3</sup> , Adel Younan <sup>3</sup> , James R. Hawkins <sup>4</sup> <sup>1</sup> ExxonMobil Development Company, Houston, United States <sup>2</sup> SeaRiver Maritime, Houston, United States <sup>3</sup> ExxonMobil Upstream Research Company, Houston, United States <sup>4</sup> Imperial Oil Resources Ventures Limited, Calgary Canada	
POAC11-170 15.50-16.10	<b>SHIP EMERGENCY RESPONSE IN POLAR WATERS</b> Adam Broughton <sup>1</sup> , Marcel LaRoche <sup>2</sup> , Mihailo Pavic <sup>1</sup> , David Prentice <sup>1</sup> , Des Upcraft <sup>1</sup> <sup>1</sup> Lloyd's Register EMEA, London, United Kingdom <sup>2</sup> Lloyd's Register North America Inc., Burlington, Canada	
POAC11-190 16.10-16.30	<b>WHEN CERTAINTY IS FAR FROM CERTAIN</b> Adam Chamberlain <sup>1</sup> <sup>1</sup> Borden Ladner Gervais LLP, Toronto, Canada	
POAC11-047 16.30-16.50	<b>OPTIMUM LOAD SPACING FOR SAFER TRANSPORTATION ON FLOATING ICE</b> Farzin Keshmiri <sup>1</sup> <sup>1</sup> Production Services Network (PSN), Aberdeen, United Kingdom	
POAC11-166 16.50-17.10	<b>ICE MANAGEMENT FOR STEERING OF LARGE ICE FLOES</b> Khalid Soofi <sup>1</sup> , Peter Noble <sup>1</sup> , Chris Yetsko <sup>1</sup> , Denise Sudom <sup>2</sup> , Anne Collins <sup>2</sup> , Mohamed Sayed <sup>2</sup> <sup>1</sup> ConocoPhillips Company, Houston, United States <sup>2</sup> Canadian Hydraulics Centre, National Research Council, Ottawa, Canada	

**Monday 17.10 Free Evening in Montreal**

Monday July 11 17.10 –

## POAC'11- Program Overview

### Tuesday 9.00 Parallel sessions

**Paper ID**      **12.2 INNOVATIONS IN NAVIGATION AND SHIPPING IN ICE-COVERED WATERS**      **Room:** Salon Des Saisons A  
**Chair:** Marcel LaRoche

POAC11-005      **AN APPROACH FOR INCLUDING POLAR CLASS VESSELS IN THE CANADIAN ARCTIC SHIPPING REGULATIONS**

G.W. Timco<sup>1</sup>, A. Collins<sup>1</sup>, I. Kubat<sup>1</sup>

<sup>1</sup>Canadian Hydraulics Centre, National Research Council of Canada, Ottawa, Canada

POAC11-093      **RISK-BASED APPROACH FOR STRUCTURAL DESIGN OF ICE-STRENGTHENED VESSELS NAVIGATING IN THE BALTIC SEA**

Jorma Kaldasau<sup>1</sup>, Pentti Kujala<sup>1</sup>

<sup>1</sup>Aalto University School of Engineering, Helsinki, Finland

9:40 – 10:00      **PANEL DISCUSSION OF ARCTIC SHIPPING (POLAR CODE) RULES**  
**Chair:** Ross MacDonald

**Paper ID**      **2.4 ICE-STRUCTURE INTERACTION**      **Room:** Salon Printemps  
**Chair:** Mitch Winkler

POAC11-039      **SPATIAL-TEMPORAL VARIABILITY OF STATIC ICE FORCES**

9:00-9:20      Brian Morse<sup>1</sup>, Edward Stander<sup>2</sup>, Alain Côté<sup>3</sup>, André Taras<sup>3</sup>, Rock Santerre<sup>1</sup>, Yann Prat<sup>1</sup>

<sup>1</sup>Laval University, Laval, Canada

<sup>2</sup>State University of New York, Cobleskill, United States

<sup>3</sup>Institut de recherche d'Hydro-Québec, Varennes, Canada

POAC11-009      **CALCULATION OF ICE ABRASION FOR THE LIGHTHOUSES INSTALLED IN THE GULF OF BOTHNIA**

9:20-9:40

A. Bekker<sup>1</sup>, T. Uvarova<sup>1</sup>, E. Pomnikov<sup>1</sup>

<sup>1</sup>Far Eastern Federal University, Vladivostok, Russia

POAC11-102      **CAN WE ENGINEER ICE RUBBLE FOR PROTECTION OF OFFSHORE PLATFORMS IN THE BEAUFORT SEA?**

9:40 – 10:00

Anne Barker<sup>1</sup>, Garry Timco<sup>1</sup>, Paul Spencer<sup>2</sup>

<sup>1</sup>National Research Council of Canada - Canadian Hydraulics Centre, Ottawa, Canada

<sup>2</sup>Ausenco Sandwell, Calgary, Canada

**Paper ID**      **13.1 ENGINEERING PIPELINES FOR SCOUR PROTECTION**      **Room:** Salon Été  
**Chair:** Gary Sonnichsen

POAC11-153      **KEEL-SEABED INTERACTION: NUMERICAL MODELLING FOR SANDS**

9:00-9:20

Ryan Phillips<sup>1</sup>, John Barrett<sup>1</sup>

<sup>1</sup>C-CORE, St. John's, Canada

POAC11-096      **LARGE SCALE INDENTER TEST PROGRAM TO MEASURE SUB GOUGE DISPLACEMENTS**

9:20-9:40

Rodolfo Sancio<sup>1</sup>, Ken Been<sup>2</sup>, Juan Lopez<sup>2</sup>

<sup>1</sup>MMI Engineering, Inc., Houston, United States

<sup>2</sup>Golder Associates Inc., Houston, United States

POAC11-100      **ADVANCED NUMERICAL SIMULATIONS OF ICE GOUGE EVENTS AND IMPLICATIONS FOR ENGINEERING DESIGN**

9:40-10:00

K. Pike<sup>1</sup>, S. Kenny<sup>1,2</sup>, B. Hawlader<sup>1</sup>

<sup>1</sup>Memorial University of Newfoundland, St. John's, Canada

<sup>2</sup>Wood Group Chair in Arctic and Harsh Environments Engineering, Memorial University of Newfoundland, St. John's, Canada

## POAC'11- Program Overview

### Tuesday 10.20 Parallel sessions

<b>Paper ID</b>	<b>1.3 ICE PROPERTIES</b>	<b>Room: Salon Des Saisons A</b> <b>Chair: Lennart Fransson</b>
POAC11-180 10.20-10.40	<b>OBSERVING THE SNOW AND ICE PROPERTIES OVER THE LABRADOR SHELF WITH HELICOPTER-BORNE GROUND-PENETRATING RADAR, LASER AND ELECTROMAGNETIC SENSORS</b> Simon Prinsenber <sup>1</sup> , Ingrid Peterson <sup>2</sup> , Scott Holliday <sup>3</sup> , Louis Lalumier <sup>3</sup> <sup>1</sup> Fisheries and Oceans Canada, Bedford Institute of Oceanography, Dartmouth, Canada <sup>2</sup> Geosensors Inc., Toronto, Canada <sup>3</sup> Sensors by Design Ltd., Newmarket, Canada	
POAC11-184 10.40-11.00	<b>2010 ARCTIC VOYAGE OF THE ICEBREAKING RESEARCH VESSEL 'ARAON' AND MATERIAL PROPERTIES OF ARCTIC SEA ICE</b> Kyungsik Choi <sup>1</sup> , Young-Jin Park <sup>1</sup> , Dae-Hwan Kim <sup>1</sup> , Jong-Ho Nam <sup>1</sup> <sup>1</sup> Korea Maritime University, Busan, Korea	
POAC11-186 11.00-11.20	<b>OIL ENTRAINMENT AND MIGRATION IN LABORATORY-GROWN SALTWATER ICE</b> Jonas Karlsson <sup>1,2</sup> , Chris Petrich <sup>2</sup> , Hajo Eicken <sup>2</sup> <sup>1</sup> University of Copenhagen, Copenhagen, Denmark <sup>2</sup> Geophysical Institute, University of Alaska Fairbanks, Fairbanks, United States	
POAC11-124 11.20-11.40	<b>FIRST-YEAR ICE CONDITIONS FOR OPERATIONS OF THE CANADIAN COAST GUARD POLAR ICEBREAKER</b> Robert Frederking <sup>1</sup> , Anne Collins <sup>1</sup> , Ivana Kubat <sup>1</sup> <sup>1</sup> Canadian Hydraulics Centre, Ottawa, Canada	
POAC11-179 11.40-12.00	<b>FLATJACK CALIBRATION FOR IN-SITU TESTING</b> M.T. Pennington <sup>1</sup> , J.P. Dempsey <sup>1</sup> <sup>1</sup> Clarkson University, Potsdam, United States	
<b>Paper ID</b>	<b>2.5 ICE-STRUCTURE INTERACTION</b>	<b>Room: Salon Printemps</b> <b>Chair: Dave Kerr</b>
POAC11-034 10.20-10.40	<b>STRUCTURAL RESPONSE TO WIND AT THE CONFEDERATION BRIDGE – PIERS 31 AND 32</b> J. Susan Tibbo <sup>1</sup> , Noorma Shrestha <sup>2</sup> , Thomas G. Brown <sup>2</sup> <sup>1</sup> Chevron Canada, Calgary, Canada <sup>2</sup> University of Calgary, Calgary, Canada	
POAC11-028 10.40-11.00	<b>THE STUDY OF RELATIONSHIP BETWEEN ICE GEOMETRIC CHARACTERISTICS AND THEIR EFFECT ON ICE LOAD</b> Noorma Shrestha <sup>1</sup> , Thomas G. Brown <sup>1</sup> , Derek C. Mayne <sup>1</sup> <sup>1</sup> University of Calgary, Calgary, Canada	
POAC11-011 11.00-11.20	<b>DETAILED PRESSURE DISTRIBUTION ANALYSIS OF A CONFEDERATION BRIDGE PIER</b> Dhruba Tripathi <sup>1</sup> , Derek C. Mayne <sup>1</sup> , Thomas G. Brown <sup>1</sup> <sup>1</sup> University of Calgary, Calgary, Canada	
POAC11-103 11.20-11.40	<b>POTENTIAL FOR OIL AND GAS PROJECTS IN THE NEW OIL AND GAS PROVINCE SHARED BETWEEN RUSSIA AND NORWAY</b> Maria Bulakh <sup>1,2</sup> , Ove T Gudmestad <sup>1</sup> , Anatoly B Zolotukhin <sup>1,2</sup> <sup>1</sup> University of Stavanger, Stavanger, Norway <sup>2</sup> Gubkin State University of Oil and Gas, Moscow, Russia	
POAC11-147 11.40-12.00	<b>CHARACTERISTICS OF ICE DRIFT IN THE WESTERN BARENTS SEA RECONSTRUCTED BY THE DATA OF ICE TRACKERS DEPLOYED ON DRIFTING ICE OF THE BARENTS SEA IN 2008 AND 2010</b> Aleksy Marchenko <sup>1</sup> , Beate Kvamstad <sup>2</sup> , Kay Fjørtoft <sup>2</sup> , Knut Hoyland <sup>1</sup> , Dmitry Brazhnikov <sup>3</sup> <sup>1</sup> The University Centre in Svalbard, Longyearbyen, Norway <sup>2</sup> MARINTEK e-Maritime, Trondheim, Norway <sup>3</sup> State Oceanography Institute, Moscow, Russia	

## POAC'11- Program Overview

Paper ID		Room: Salon Été Chair: George Li
	<b>5.2 OPERATIONAL EXPERIENCE: LESSONS LEARNED FROM THE CASPIAN SEA</b>	
POAC11-003 10.20-10.40	<b>MODELLING OF ICE RUBBLE ACCUMULATIONS IN THE NORTH CASPIAN SEA</b> Richard McKenna <sup>1</sup> , Dave McGonigal <sup>4</sup> , Paul Stuckey <sup>2</sup> , Greg Crocker <sup>3</sup> , Bob Marcellus <sup>7</sup> Ken Croasdale <sup>5</sup> , Paul Verlaan <sup>6</sup> , Ainur Abuova <sup>6</sup> <sup>1</sup> R.F. McKenna & Associates, Wakefield, Canada <sup>2</sup> C-CORE, St. John's, Canada <sup>3</sup> Ballicater Consulting, Kingston, Canada <sup>4</sup> D. McGonigal, Calgary, Canada <sup>5</sup> K.R. Croasdale & Associates, Calgary, Canada <sup>6</sup> Shell Development Kashagan, Brentford, United Kingdom <sup>7</sup> CMEL, Spencerville, Canada	
POAC11-118 10.40-11.00	<b>SOME OBSERVATIONS OF ICE FEATURES IN THE NORTH CASPIAN SEA</b> Greg Crocker <sup>1</sup> , Avron Ritch <sup>2</sup> , Rune Nilsen <sup>3</sup> <sup>1</sup> Ballicater Consulting Ltd., Kingston, Canada <sup>2</sup> Avron Ritch Consulting Ltd, Vancouver, Canada <sup>3</sup> Shell International Exploration and Production, Rijswijk, The Netherlands	
POAC11-052 11.00-11.20	<b>ICE GOING CAPABILITY OF A SMALL UNCONVENTIONAL VESSEL IN THE KASHAGAN FIELD</b> L. Cok <sup>1</sup> , K.E., Sazonov <sup>2</sup> , V.A. Belyashov <sup>2</sup> , V.M. Shaposhnikov <sup>2</sup> , A.B. Nesterov <sup>2</sup> , Putorti <sup>3</sup> <sup>1</sup> Navalprogetti S.r., Trieste, Italy <sup>2</sup> E., Krylov Shipbuilding Research Institute, St. Petersburg, Russia <sup>3</sup> Agip KCO, Atyrau, Kazakhstan	
POAC11-056 11.20-11.40	<b>INVESTIGATION OF THE ICE REGIME OF THE EASTERN PART OF THE CASPIAN WITHIN BACKGROUND ECOLOGICAL INVESTIGATION PROGRAM AT YUZHNY JAMBAY- YUZHNY ZABURUNJE</b> E. Ayazbaev <sup>1</sup> , P.I.Buharitsin <sup>2</sup> <sup>1</sup> NPC Mekensak, Kazakhstan <sup>2</sup> Astrakhan forwarding base of Institute of water problems of the Russian Academy of Sciences, Astrakhan, Russia	
POAC11-055 11.40-12.00	<b>ICE CONDITIONS ON THE LOWER VOLGA AND THE NORTH-CASPIAN SEA DURING THE MODERATE WINTER OF 2009-2010</b> P.I.Buharitsin <sup>1</sup> <sup>1</sup> Astrakhan forwarding base of Institute of water problems of the Russian Academy of Sciences, Astrakhan, Russia	

### Tuesday 13.30 City Tour and visit to La Sucrerie

Tuesday July 12 13.30 –22.00 Buses will leave from the Omni Hotel

## POAC'11- Program Overview

### Wednesday 9.00 Keynote Lecture 2

Wednesday July 13 9.00 – 9.30

Room: Salon Des Saisons A

Chair: Anne Barker

#### YEAR ROUND ARCTIC OPERATIONS

Tim Keane

FEDNAV Limited, Montreal, Canada

### Wednesday 9.30 Keynote Lecture 3

Wednesday July 13 9.30 – 10.00

Room: Salon Des Saisons A

Chair: Anne Barker

#### ISO 19906 - AN INTERNATIONAL STANDARD FOR ARCTIC OFFSHORE STRUCTURES

W. Spring<sup>1</sup>, R. F. McKenna<sup>2</sup>, G.A.N. Thomas<sup>3</sup>, D. Blanchet<sup>4</sup>

<sup>1</sup>Bear Ice Technology, Inc., Dallas, United States

<sup>2</sup>R. F. McKenna and Associates, Wakefield, Canada

<sup>3</sup>BP Exploration Operating Company Ltd, Sunbury, United Kingdom

<sup>4</sup>BPXA Alaska, Arcadia, United States

### Wednesday 10.20 Parallel sessions

Paper ID

#### 6.1 ISO 19906 ARCTIC OFFSHORE STRUCTURES: SCOPE AND RATIONALE

Room: Salon Des Saisons A

Chair: Walt Spring

POAC11-142  
10.20-10.40

#### ISO 19906: BEARING CAPACITY OF ICE AND ICE ROADS

Dan Masterson<sup>1</sup>, Sveinung Løset<sup>2,3</sup>

<sup>1</sup>Chevron Canada Resources, Calgary, Canada

<sup>2</sup>Norwegian University of Science and Technology, Trondheim, Norway

<sup>3</sup>The University Centre in Svalbard, Longyearbyen, Norway

POAC11-155  
10.40-11.00

#### ISO 19906 – IMPLICATIONS FOR ARCTIC OFFSHORE ESCAPE, EVACUATION AND RESCUE

J. Poplin<sup>1</sup>, F. Bercha<sup>2</sup>, C. Brummelkamp<sup>3</sup>, D. Dickins<sup>4</sup>, S. Knight<sup>5</sup>, M. Mansurov<sup>6</sup>, M. Mørland<sup>7</sup>, D. Onshuus<sup>8</sup>, V. Santos-Pedro<sup>9</sup>, A. Simões Re<sup>10</sup>, G. Timco<sup>11</sup>

<sup>1</sup>ExxonMobil Development Company, Houston, United States

<sup>2</sup>Bercha Group, Calgary, Canada

<sup>3</sup>Shell Upstream International, The Hague, The Netherlands

<sup>4</sup>DF Dickins Associates, La Jolla, United States

<sup>5</sup>Gardin-Haag B.V., The Hague, The Netherlands

<sup>6</sup>Gazprom VNNIGAZ, Moscow, Russia

<sup>7</sup>Statoil ASA, Oslo, Norway

<sup>8</sup>Dag K. Onshuus, Drammen, Norway

<sup>9</sup>Transport Canada, Ottawa, Canada

<sup>10</sup>NRC Institute for Ocean Technology, St. John's, Canada

<sup>11</sup>NRC Canadian Hydraulics Center, Ottawa, Canada

POAC11-064  
11.00-11.20

#### DATA FOR CRUSHING FORMULA

T. Kärnä<sup>1</sup>, D.M. Masterson<sup>2</sup>

<sup>1</sup>Karna Research and Consulting, Helsinki, Finland

<sup>2</sup>Chevron Canada Limited, Calgary, Canada

POAC11-063  
11.20-11.40

#### ISO 19906 ICE CRUSHING LOAD DESIGN EXTENSION FOR NARROW STRUCTURES

Mauri Määttä<sup>1</sup>, Tuomo Kärnä<sup>2</sup>

<sup>1</sup>Aalto University, Espoo, Finland / NTNU, Trondheim, Norway

<sup>2</sup>Karna Research and Consulting, Helsinki, Finland

POAC11-065  
11.40-12.00

#### ISO 19906 ANNEX B – DESCRIPTION AND USE

W. Spring<sup>1</sup>, G. Timco<sup>2</sup>, Y. Mironov<sup>3</sup>, C. J Shaw<sup>4</sup>

<sup>1</sup>Bear Ice Technology, Inc., Dallas, United States

<sup>2</sup>NRC Canadian Hydraulics Center, Ottawa, Canada

<sup>3</sup>Arctic and Antarctic Research Institute, Saint Petersburg, Russia

<sup>4</sup>Shell (UK) Exploration and Production, Aberdeen, United Kingdom

## POAC'11- Program Overview

### 2.6 ICE-STRUCTURE INTERACTION

**Room:** Salon Printemps  
**Chair:** Dmitri Matskevitch

- POAC11-024  
10.20-10.40 **INTRODUCTION OF ICE LOADS IN OVERALL SIMULATION OF OFFSHORE WIND TURBINES**  
Jaakko Heinonen<sup>1</sup>, Sebastian Hetmanczyk<sup>2</sup>, Michael Strobel<sup>2</sup>  
<sup>1</sup>VTT Technical Research Centre of Finland, Espoo, Finland  
<sup>2</sup>Fraunhofer Institute for Wind Energy and Energy System Technology (IWES), Bremerhaven, Germany
- POAC11-025  
10.40-11.00 **ICE INDUCED VIBRATION IMPLEMENTATION OF MÄÄTTÄNEN MODEL AND DEVELOPMENT OF DESIGN SUPPLEMENTS**  
Harsh Nandan<sup>1</sup>, Adel H. Younan<sup>2</sup>, Lu Deng<sup>2</sup>  
<sup>1</sup>Virginia Polytechnic Institute and State University, Blacksburg, United States  
<sup>2</sup>ExxonMobil Upstream Research Company, Houston, United States
- POAC11-125  
11.00-11.20 **AN INSIDE LOOK AT ICE-CRUSHING INDUCED VIBRATION AND LOCK-IN**  
R.E. Gagnon<sup>1</sup>  
<sup>1</sup>Institute for Ocean Technology, National Research Council of Canada, St. Johns, Canada
- POAC11-030  
11.20-11.40 **CRITERION OF ICE INDUCED SELF EXCITED VIBRATION**  
Fengwei Guo<sup>1</sup>, Qianjin Yue<sup>1</sup>  
<sup>1</sup>State Key Laboratory of Structural Analysis for Industrial Equipment Dalian University of Technology, Dalian, China
- POAC11-031  
11.40-12.00 **ICE INDUCED VIBRATIONS OF FLEXIBLE OFFSHORE STRUCTURES: THE EFFECT OF LOAD RANDOMNESS, HIGH ICE VELOCITIES AND HIGHER STRUCTURAL MODES**  
H. Hendrikse<sup>1</sup>, G.L. Kuiper<sup>2</sup>, A.V. Metrikine<sup>1</sup>  
<sup>1</sup>Delft University of Technology, Delft, The Netherlands  
<sup>2</sup>Shell Global Solutions International B.V., Rijswijk, The Netherlands

#### Paper ID

### 7.1 EER FOR ICE-COVERED WATERS

**Room:** Salon Été  
**Chair:** Antonio Simões Ré

- POAC11-070  
10.20-10.40 **AN OVERVIEW OF RECENT PROJECTS TO STUDY THERMAL PROTECTION IN LIFERAFTS, LIFEBOATS AND IMMERSION SUITS**  
L. Mak<sup>1,6</sup>, M.B. DuCharme<sup>2,6</sup>, B. Farnworth<sup>3,6</sup>, E.H. Wissler<sup>4,6</sup>, R. Brown<sup>5,6</sup>, A. Kuczora<sup>1,6</sup>  
<sup>1</sup>National Research Council Canada, Institute for Ocean Technology (NRC-IOT), St. John's, Canada  
<sup>2</sup>Defence R&D, Toronto, Canada  
<sup>3</sup>Helly Hansen, Dartmouth, Canada  
<sup>4</sup>University of Texas, Austin, United States  
<sup>5</sup>Marine Institute Offshore Safety and Survival Centre, St. Johns, Canada  
<sup>6</sup>Maritime and Arctic Survival Scientific and Engineering Research Team (MASSERT)
- POAC11-156  
10.40-11.00 **PERFORMANCE MEASUREMENTS OF THE EFFECT OF SIMULATOR TRAINING ON NOVICE OPERATORS IN SIMULATED ICE CONDITIONS.**  
Stephanie Power MacDonald<sup>1</sup>, Scott MacKinnon<sup>1</sup>, Antonio Simões Ré<sup>2</sup>, Jonathan Power<sup>2</sup>  
<sup>1</sup>Memorial University, St. John's, Canada  
<sup>2</sup>Institute for Ocean Technology, St. John's, Canada
- POAC11-143  
11.00-11.20 **OCCUPANT HABITABILITY WITHIN A TOTALLY ENCLOSED MOTOR PROPELLED SURVIVAL CRAFT**  
Andrew Baker<sup>1</sup>, António Simões Ré<sup>2</sup>, Jonathan Power<sup>2</sup>, Scott N. MacKinnon<sup>1</sup>  
<sup>1</sup>Memorial University, St. John's, Canada  
<sup>2</sup>National Research Council - Institute for Ocean Technology, St. John's, Canada
- POAC11-116  
11.20-11.40 **SEASONAL STRATEGIES FOR EVACUATION FROM OFFSHORE STRUCTURES IN THE BEAUFORT SEA**  
Anne Barker<sup>1</sup>, Garry Timco<sup>1</sup>, Brian Wright<sup>2</sup>  
<sup>1</sup>National Research Council of Canada - Canadian Hydraulics Centre, Ottawa, Canada  
<sup>2</sup>B. Wright and Associates Ltd., Canmore, Canada
- POAC11-174  
11.40-12.00 **KEY CONSIDERATIONS RELATED TO THE USE OF SUPPORT VESSELS FOR PERSONNEL EVACUATION FROM OFFSHORE STRUCTURES IN THE BEAUFORT SEA**  
B. Wright<sup>1</sup>, R. Browne<sup>2</sup>, G. Timco<sup>3</sup>, A. Barker<sup>3</sup>  
<sup>1</sup>B. Wright & Associates Ltd., Canmore, Canada  
<sup>2</sup>R. P. Browne Marine Ltd., Qualicum Beach, Canada  
<sup>3</sup>Canadian Hydraulics Centre, National Reserach Council of Canada, Ottawa, Canada

## POAC'11- Program Overview

- POAC11-160 **FIELD TRIALS OF A LIFEBOAT IN ICE AND OPEN WATER CONDITIONS**  
12.00-12.20 A. Simões Ré<sup>1</sup>, B. Veitch<sup>2</sup>, A. Kuczora<sup>1</sup>, A. Barker<sup>3</sup>, D. Sudom<sup>3</sup>, P. Gifford<sup>1</sup>  
<sup>1</sup>Institute for Ocean Technology- National Research Council, St. John's, Canada  
<sup>2</sup>University of Newfoundland, St. John's, Canada  
<sup>3</sup>Canadian Hydraulics Centre-National Research Council, Ottawa, Canada

### Wednesday 13.30 Parallel sessions

- Paper ID** **6.2 ISO 19906 ARCTIC OFFSHORE STRUCTURES: SCOPE AND RATIONALE** **Room:** Salon Des Saisons A  
**Chair:** Graham Thomas
- POAC11-059 **COMPARISON OF ICE LOAD CALCULATIONS USING ISO 19906, CSA, API AND SNIP**  
13.30-13.50 D.M. Masterson<sup>1</sup>, J. Susan Tibbo<sup>1</sup>  
<sup>1</sup>Chevron Canada Resources, Calgary, Canada
- POAC11-057 **ICE MANAGEMENT AND OPERATIONAL STRATEGY FOR FLOATERS IN ICE**  
13.50-14.10 Costas Makrygiannis<sup>1</sup>, Richard McKenna<sup>2</sup>, Brian Wright<sup>3</sup>, Tore Sildnes<sup>4</sup>, Wim Jolles<sup>5</sup>, Morten Mørland<sup>6</sup>, Roger Basu<sup>7</sup>, Norm Allyn<sup>8</sup>  
<sup>1</sup>Petoro AS, Stavanger, Norway  
<sup>2</sup>R.F. McKenna & Associates, Wakefield, Canada  
<sup>3</sup>B. Wright Associates, Canmore, Canada  
<sup>4</sup>DnV, Høvik, Norway  
<sup>5</sup>Jolmar, Den Haag, The Netherlands  
<sup>6</sup>Statoil, Oslo, Norway  
<sup>7</sup>ABS, Houston, United States  
<sup>8</sup>Worley Parsons, North Vancouver, Canada
- POAC11-062 **THE NEW ISO19906 STANDARD AND RELATED ARCTIC ACTIVITIES AT DNV**  
14.10-14.30 P.O. Moslet<sup>1</sup>, O.T. Gudmestad<sup>2</sup>, T. Sildnes<sup>1</sup>, E. Sæbø<sup>1</sup>  
<sup>1</sup>Det Norske Veritas, DNV, Høvik, Norway  
<sup>2</sup>University of Stavanger, Stavanger, Norway
- POAC11-060 **MOVING ON FROM ISO 19906: WHAT OUGHT TO FOLLOW?**  
14.30-14.50 Andrew Palmer<sup>1</sup>  
<sup>1</sup>Centre for Offshore Research and Engineering, National University of Singapore, Singapore
- POAC11-079 **THE POTENTIAL OF SATELLITE EARTH OBSERVATION OF ICE CONDITIONS IN SUPPORTING ISO 19906**  
14.50-15.10 Kim Partington<sup>1</sup>, Nicolas Fournier<sup>2</sup>, Mitchell Winkler<sup>3</sup>  
<sup>1</sup>Polar Imaging Limited, Andover, United Kingdom  
<sup>2</sup>Shell International Exploration and Production, Rijswijk, The Netherlands  
<sup>3</sup>Shell International Exploration and Production, Houston, United States

- Paper ID** **9.1 ICE FORECASTING** **Room:** Salon Printemps  
**Chair:** Mohamed Sayed
- POAC11-173 **LONG TERM BALTIC SEA ENSEMBLE FORECASTING**  
13.30-13.50 Antti Westerlund<sup>1</sup>, Byoung Woong An<sup>1</sup>, Tapani Stipa<sup>1</sup>  
<sup>1</sup>Finnish Meteorological Institute, Helsinki, Finland
- POAC11-135 **A CONCEPTUAL FUZZY LOGIC MODEL TO ESTIMATE SHIP SCALE ICE COMPRESSION HAZARD**  
13.50-14.10 Tarmo Kõuts<sup>1</sup>, Madis-Jaak Lilover<sup>1</sup>  
<sup>1</sup>Tallinn University of Technology, Tallinn, Estonia
- POAC11-139 **OBSERVATIONS OF SHIPS IN COMPRESSIVE ICE**  
14.10-14.30 Hanna Leisti<sup>1</sup>, Kristjan Kaups<sup>2</sup>, Jonni Lehtiranta<sup>3</sup>, Mikael Lindfors<sup>1</sup>, Mikko Suominen<sup>3</sup>, Mikko Lensu<sup>3</sup>, Jari Haapala<sup>3</sup>, Kaj Riska<sup>1</sup>, Tarmo Kouts<sup>4</sup>  
<sup>1</sup>ILS Oy, Helsinki, Finland  
<sup>2</sup>Aalto University, Espoo, Finland  
<sup>3</sup>Finnish Meteorological Institut, Helsinki, Finland  
<sup>4</sup>Tallinn University of Technology, Tallinn, Estonia

## POAC'11- Program Overview

- POAC11-084 **A MODIFIED DISCRETE ELEMENT MODEL FOR SEA ICE DYNAMICS**  
14.30-14.50 Shunying Ji<sup>1</sup>, Anliang Wang<sup>1</sup>, Baohui Li<sup>2</sup>, Yu Liu<sup>2</sup>, Hai Li<sup>2</sup>  
<sup>1</sup>Department of Engineering Mechanics, Dalian University of Technology, Dalian, China  
<sup>2</sup>National Marine Environment Forecast Centre, Beijing, China
- POAC11-078 **THE INFLUENCE OF SOLAR ACTIVITY FLUCTUATIONS ON LONG-TERM CLIMATIC EVENTS IN THE NORTH-CASPIAN REGION FOR THE PERIOD BEFORE 2017**  
14.50-15.10 Petr Buharitsin<sup>1</sup>, A.N. Andreev<sup>2</sup>  
<sup>1</sup>Institute Of Hydro Problem, RAS & Astrakhan State Technical University, Astrakhan, Russia  
<sup>2</sup>Hydrometeorological centre of the Caspian fleet, Astrakhan, Russia
- Paper ID**      **12.3 INNOVATIONS IN NAVIGATION AND SHIPPING IN ICE-COVERED WATERS**      **Room:** Salon Été  
**Chair:** Roger Basu
- POAC11-152 **ICE HAZARD RADAR**  
13.30-13.50 Barbara O'Connell<sup>1</sup>  
<sup>1</sup>Canadian Coast Guard, Ottawa, Canada
- POAC11-089 **SYNTHETIC APERTURE RADAR BASED ICE AND ICEBERG MONITORING IN SUPPORT OF TACTICAL OPERATIONS**  
13.50-14.10 Desmond Power<sup>1</sup>, Kim Partington<sup>2</sup>, Nick Walker<sup>3</sup>  
<sup>1</sup>C-CORE, St. John's, Canada  
<sup>2</sup>Polar Imaging Limited, Andover, United Kingdom  
<sup>3</sup>eOsphere, West Woodhay, United Kingdom
- POAC11-136 **CHARACTERIZATION OF PRESSURED ICE THREAT TO SHIPPING**  
14.10-14.30 Ivana Kubat<sup>1</sup>, David Watson<sup>1</sup>, Mohammed Sayed<sup>1</sup>  
<sup>1</sup>National Research Council of Canada, Canadian Hydraulics Centre, Ottawa, Canada
- POAC11-138 **A SHIP MANOEUVRING IN ICE MODELING SOFTWARE OSIS-IHI**  
14.30-14.50 Michael Lau<sup>1</sup>  
<sup>1</sup>National Research Council of Canada, Institute for Ocean Technology, St. John's, Canada
- POAC11-092 **DEVELOPMENT OF PREDICTION METHODS FOR ICE GOING SHIPS BASED ON NEURAL NETWORKS**  
14.50-15.10 Nils Reimer<sup>1</sup>  
<sup>1</sup>The Hamburg Ship Model Basin, Hamburg, Germany

### Wednesday 15.30 Parallel sessions

- Paper ID**      **1.4 ICE PROPERTIES**      **Room:** Salon Des Saisons A  
**Chair:** Ian Jordaan
- POAC11-169 **THE ROLE OF SPALLING FRACTURE IN SCALE EFFECT IN COMPRESSIVE ICE FAILURE**  
15.30-15.50 Rocky S. Taylor<sup>1</sup>, Ian J. Jordaan<sup>1,2</sup>  
<sup>1</sup>C-CORE, St. John's, Canada  
<sup>2</sup>Ian Jordaan and Associates, St. John's, Canada
- POAC11-021 **REVIEW IN EXPERIMENTAL STUDIES ON FREEZE-BONDS**  
15.50-16.10 Ada H. V. Repetto-Llamazares<sup>1</sup>, Knut V. Høyland<sup>1</sup>  
<sup>1</sup>Norwegian University of Science and Technology (NTNU), Trondheim, Norway
- POAC11-187 **MODELLED BULK SALINITY OF GROWING FIRST-YEAR SEA ICE AND IMPLICATIONS FOR ICE PROPERTIES IN SPRING**  
16.10-16.30 Chris Petrich<sup>1,2</sup>, Pat Langhorne<sup>1</sup>, Hajo Eicken<sup>2</sup>  
<sup>1</sup>Department of Physics, University of Otago, Dunedin, New Zealand  
<sup>2</sup>Geophysical Institute, University of Alaska Fairbanks, Fairbanks, United States
- POAC11-013 **ANALYSIS OF THE PROBLEM OF SATURATION OF ICE WITH AIR BUBBLES**  
16.30-16.50 Vadim K. Goncharov<sup>1</sup>, Natalia Yu. Klementieva<sup>2</sup>, Jian-min Qin<sup>3</sup>  
<sup>1</sup>Department of Oceanotechnics and Marine Technology, St.-Petersburg State Marine Technical University, Saint-Petersburg, Russia  
<sup>2</sup>Ice Laboratory, Krylov Shipbuilding Research Institute, Saint-Petersburg, Russia  
<sup>3</sup>Ministry of Education Key Laboratory of Advanced Transducers and Intelligent Control Systems, Taiyuan University of Technology, Shanxi, China

## POAC'11- Program Overview

- POAC11-140  
16.50-17.10 **EXPERIMENTAL STUDY ON THE POROSITY EFFECT ON THE UNIAXIAL COMPRESSIVE STRENGTH OF BOHAI SEA ICE**  
Zhijun Li<sup>1</sup>, Limin Zhang<sup>1</sup>, Peng Lu<sup>1</sup>, Guangwei Li<sup>1</sup>, Matti Leppäranta<sup>2</sup>  
<sup>1</sup>State Key Laboratory of Coastal and Offshore Engineering, Dalian University of Technology, Dalian, China  
<sup>2</sup>Department of Physics, Helsinki University, Helsinki, Finland

**Paper ID**      **9.2 ICE FORECASTING**

**Room:** Salon Printemps  
**Chair:** Mohamed Sayed

- POAC11-072  
15.30-15.50 **ON A NEW NUMERICAL SCHEME FOR ICE DYNAMICS MODELS**  
Robert S Pritchard<sup>1</sup>, Bruno Tremblay<sup>2</sup>  
<sup>1</sup>IceCasting, Inc, San Rafael, United States  
<sup>2</sup>McGill University, Montreal, Canada
- POAC11-075  
15.50-16.10 **ARCTIC ICE EXTENT FORECASTING USING THE UKMO GLOSEA4 SEASONAL PREDICTION SYSTEM**  
K.A. Peterson<sup>1</sup>, A. Arribas<sup>1</sup>, A. McLaren<sup>1</sup>, H. Hewitt<sup>1</sup>, M. Gordon<sup>1</sup>  
<sup>1</sup>Hadley Centre, UK Met Office, Exeter, United Kingdom
- POAC11-114  
16.10-16.30 **THE INCORPORATION OF AN OCEAN TEMPERATURE PROFILE INTO AN EXISTING ICEBERG DETERIORATION MODEL**  
S. E. Bruneau<sup>1</sup>, E. G. Manning<sup>1</sup>, G. Crocker.<sup>2</sup>  
<sup>1</sup>Faculty of Engineering and Applied Science, Memorial University of Newfoundland, St. John's, Canada  
<sup>2</sup>Ballicater Consulting Limited, Kingston, Canada
- POAC11-076  
16.30-16.50 **EVALUATION OF THE CONCEPTS SEA ICE FORECASTS**  
Gregory C. Smith<sup>1</sup>, Christiane Beaudoin<sup>1</sup>, Alain Caya<sup>1</sup>, Mark Buehner<sup>1</sup>, Francois Roy<sup>2</sup>, Fraser Davidson<sup>3</sup>, Jennifer Wells<sup>3</sup>, Tom Carrieres<sup>4</sup>, Hal Ritchie<sup>5</sup>, Youyu Lu<sup>6</sup>  
<sup>1</sup>Meteorological Research Division, Environment Canada, Dorval, Canada  
<sup>2</sup>Canadian Meteorological Centre, Environment Canada, Dorval, Canada  
<sup>3</sup>Northwest Atlantic Fisheries Centre, Fisheries and Oceans Canada, St. Johns, Canada  
<sup>4</sup>Canadian Ice Service, Environment Canada, Ottawa, Canada  
<sup>5</sup>Meteorological Research Division, Environment Canada, Dartmouth, Canada  
<sup>6</sup>Bedford Institute of Oceanography, Fisheries and Oceans Canada, Bedford, Canada

**Paper ID**      **8.1 MOORED STRUCTURES IN ICE-COVERED WATERS**

**Room:** Salon Été  
**Chair:** Sveinung Løset

- POAC11-123  
15.30-15.50 **EXPERIENCES AT HSVA WITH MODEL TESTING OF MOORED STRUCTURES IN ICE-COVERED WATERS**  
Karl-Ulrich Evers<sup>1</sup>, Peter Jochmann<sup>1</sup>  
<sup>1</sup>Hamburg Ship Model Basin (HSVA), Hamburg, Germany
- POAC11-146  
15.50-16.10 **WATER-ICE ACTIONS ON FLOATING PLASTIC JETTY IN SVALBARD**  
Aleksy Marchenko<sup>1</sup>, Kjetil Bråten<sup>2</sup>  
<sup>1</sup>The University Centre in Svalbard, Longyearbyen, Norway  
<sup>2</sup>Port of Longyearbyen, Longyearbyen, Norway
- POAC11-176  
16.10-16.30 **NUMERICAL SIMULATIONS OF MOORED STRUCTURES IN ICE: INFLUENCE OF VARYING ICE PARAMETERS**  
Basile Bonnemaire<sup>1</sup>, Trine Lundamo<sup>1</sup>, Nicolas Serré<sup>1,2</sup>, Arnt Fredriksen<sup>1,2</sup>  
<sup>1</sup>Barlindhaug Consult, Tromsø, Norway  
<sup>2</sup>Norwegian University of Science and Technology (NTNU), Trondheim, Norway
- POAC11-106  
16.30-16.50 **SIMULATION METHODOLOGY FOR ASSESSING SEA ICE DOWNTIME OF A FLOATING PLATFORM**  
Basile Bonnemaire<sup>1</sup>, Trond Sagerup<sup>1</sup>, Trine Lundamo<sup>1</sup>, Arnt Fredriksen<sup>1</sup>, Pavel Liferov<sup>2</sup>, Guillaume Le Marechal<sup>2</sup>  
<sup>1</sup>Barlindhaug Consult, Tromsø, Norway  
<sup>2</sup>Shtokman Development AG, Paris, France

**Wednesday 18.00**      **POAC 11 Banquet**

Wednesday      July 13      18.00 – 22.30

**Room:** L' Atrium and Pierre de Courbertin

## POAC'11- Program Overview

### Thursday 9.00 Keynote Lecture 4

Thursday July 14 9.00 – 9.30

Room: Salon Des Saisons A

Chair: Ivana Kubat

#### POLES APART - A TALE OF TWO EARLY 20TH CENTURY EXPEDITIONS TO THE ENDS OF THE EARTH

Peter Noble

ConocoPhillips, Houston, United States

### Thursday 9.30 Keynote Lecture 5

Thursday July 14 9.30 – 10.00

Room: Salon Des Saisons A

Chair: Ivana Kubat

#### ARCTIC OFFSHORE FIELD DEVELOPMENTS IN DEEPER EURASIAN WATERS

Sveinung Løset

Centre for Sustainable Arctic Coastal and Marine Technology, Norwegian University of Science and Technology, Trondheim, Norway

### Thursday 10.20 Parallel sessions

**Paper ID**      **2.7 ICE-STRUCTURE INTERACTION**      **Room:** Salon Des Saisons A  
**Chair:** Richard McKenna

POAC11-022      **PHENOMENA BEHIND PEAK LOADS ON INCLINED STRUCTURE DURING A SIMULATED**  
10.20-10.40      **ICE PILE-UP PROCESS**

Jani Paavilainen<sup>1</sup>, Jukka Tuhkuri<sup>1</sup>, Arttu Polojärvi<sup>1</sup>

<sup>1</sup>Aalto University, School of Engineering, Espoo, Finland

POAC11-036      **DEVELOPMENT OF A NUMERICAL SIMULATION FOR ROTATING AND SLIDING OF THE**  
10.40-11.00      **ICE FLOES ALONG A SHIP HULL**

Junji Sawamura<sup>1</sup>, Takashi Tachibana<sup>1</sup>

<sup>1</sup>Department of Naval Architecture and Ocean Engineering, Osaka University, Osaka, Japan

POAC11-172      **NUMERICAL ASSESSMENT FOR STATIONARY STRUCTURE (KULLUK) IN MOVING**  
11.00-11.20      **BROKEN ICE**

J. Wang<sup>1</sup>, A. Derradji-Aouat<sup>1</sup>

<sup>1</sup>Institute for Ocean Technology, National Research Council, St. John's, Canada

POAC11-032      **THEORETICAL AND EXPERIMENTAL INVESTIGATIONS OF LEVEL ICE**  
11.20-11.40      **INTERACTION WITH FOUR-LEGGED STRUCTURES**

Marina M. Karulina<sup>1</sup>, Karl N. Shkhinek<sup>2</sup>, Graham A.N. Thomas<sup>3</sup>

<sup>1</sup>Krylov Shipbuilding Research Institute, Saint Petersburg, Russia

<sup>2</sup>Saint Petersburg State Polytechnical University, Saint Petersburg, Russia

<sup>3</sup>BP Exploration Operating Company Limited, Sunbury-on-Thames, United Kingdom

POAC11-033      **THREE DIMENSIONLESS INDEPENDENT PARAMETERS TO FULLY DESCRIBE AND**  
11.40-12.00      **ESTIMATE DIMENSIONLESS ICE-INDUCED PRESSURES ON VERTICAL STRUCTURES**

Aaruun V. M. Arunachalam<sup>1</sup>

<sup>1</sup>College of the North Atlantic, Burin Campus, Burin-Bay Arm, Canada

POAC11-085      **STRESS CONCENTRATION IN FLOATING ICE WITH A SLOTTED-SHAPE OPENING**  
12.00-12.20      **Farzin Keshmiri<sup>1</sup>**

<sup>1</sup>Wood Group PSN Company Ltd., Aberdeen, United Kingdom

**Paper ID**      **3.1 EXTREME ICE FEATURES**

**Room:** Salon Printemps

**Chair:** Michelle Johnson

POAC11-164      **ANALYSIS OF FIRST-YEAR AND MULTI-YEAR SEA ICE RIDGE PROPERTIES**  
10.20-10.40

Denise Sudom<sup>1</sup>, Garry Timco<sup>1</sup>, Bjørnar Sand<sup>2</sup>, Lennart Fransson<sup>3</sup>

<sup>1</sup>Canadian Hydraulics Centre, National Research Council, Ottawa, Canada

<sup>2</sup>Norut Northern Research Institute, Narvik, Norway

<sup>3</sup>Luleå University of Technology, Luleå, Sweden

## POAC'11- Program Overview

- POAC11-044 **ICE ISLAND OCCURRENCE ON THE CANADIAN EAST COAST**  
10.40-11.00 Ingrid Peterson<sup>1</sup>  
<sup>1</sup>Bedford Institute of Oceanography, Dartmouth, Canada
- POAC11-045 **EXTREME ICE FEATURES DISTRIBUTION IN THE CANADIAN ARCTIC**  
11.00-11.20 David McGonigal<sup>1</sup>, Douglas Hagen<sup>1</sup>, Leonardo Guzman<sup>2</sup>  
<sup>1</sup>Associate, Canatec Associates International Ltd., Calgary, Canada  
<sup>2</sup>Canatec Associates International Ltd., Calgary, Canada
- POAC11-046 **DANGEROUS ICE CONDITIONS AND ACCIDENTS IN RUSSIAN ARCTIC**  
11.20-11.40 Nataliya Marchenko<sup>1,2,3</sup>  
<sup>1</sup>The University Centre in Svalbard, Longyearbyen, Norway  
<sup>2</sup>The Norwegian University of Science and Technology, Department of Civil and Transport Engineering, Trondheim, Norway  
<sup>3</sup>State Oceanographic Institute, Moscow, Russia
- POAC11-042 **A REVIEW OF THE MORPHOLOGICAL AND MECHANICAL PROPERTIES OF FIRST-YEAR SEA ICE RIDGES**  
11.40-12.00 Lucie Strub-Klein<sup>1,2</sup>  
<sup>1</sup>The University Centre on Svalbard, Longyearbyen, Norway  
<sup>2</sup>The Norwegian University of Technology, Trondheim, Norway

### Paper ID

## 13.2 ENGINEERING PIPELINES FOR SCOUR PROTECTION

**Room:** Salon Été  
**Chair:** Jonathan Caines

- POAC11-094 **AN ENGINEERING ASSESSMENT OF ICE GOUGE STATISTICS AND RECOMMENDED STATISTICAL DISTRIBUTIONS FOR EXTREME ICE GOUGE PARAMETER ESTIMATION**  
10.20-10.40 Jonathan Caines<sup>1</sup>, Mike Paulin<sup>1</sup>, Shawn Kenny<sup>2</sup>  
<sup>1</sup>INTECSEA Canada, St. John's, Canada  
<sup>2</sup>Faculty of Engineering & Applied Science, Memorial University of Newfoundland, St. John's, Canada
- POAC11-185 **THE FORCES REQUIRED TO PRODUCE SEABED GOUGES**  
10.40-11.00 A. Fredj<sup>1</sup>, G. Comfort<sup>1</sup>, K. Been<sup>2</sup>  
<sup>1</sup>BMT Fleet Technology Limited, Kanata, Canada  
<sup>2</sup>Golder Associates Inc., Houston, United States
- POAC11-188 **2004 GRAND BANKS ICEBERG SCOUR SURVEY**  
11.00-11.20 Gary V. Sonnichsen<sup>1</sup>, Tony King<sup>2</sup>  
<sup>1</sup>Geological Survey of Canada, Bedford Institute of Oceanography, Bedford, Canada  
<sup>2</sup>C-CORE, St. John's, Canada
- POAC11-098 **IMPACT OF ENVIRONMENTAL FACTORS ON THE DISTRIBUTION OF EXTREME SCOURING (GOUGING) EVENTS, CANADIAN BEAUFORT SHELF**  
11.20-11.40 Steve Blasco<sup>1</sup>, Erin Carr<sup>2</sup>, Patrick Campbell<sup>2</sup>, Jim Shearer<sup>3</sup>  
<sup>1</sup>Geological Survey of Canada, Dartmouth, Canada  
<sup>2</sup>Canadian Seabed Research, Ltd., Porters Lake, Canada  
<sup>3</sup>Shearer Consulting, Ottawa, Canada
- POAC11-099 **ICEBERG SCOUR RISE-UP MODELING**  
11.40-12.00 P. Moore<sup>1</sup>, T. King<sup>1</sup>, M. Fuglem<sup>1</sup>, G. Sonnichsen<sup>2</sup>  
<sup>1</sup>C-CORE, St. John's, Canada  
<sup>2</sup>Geological Survey of Canada, Dartmouth, Canada

**Thursday 13.30**

**Parallel sessions**

### Paper ID

## 3.2 EXTREME ICE FEATURES

**Room:** Salon Des Saisons A  
**Chair:** Jukka Tuhkuri

- POAC11-175 **A COMPARATIVE ANALYSIS OF RUBBLE FIELD DATA COLLECTION TECHNIQUES**  
13.30-13.50 Mark Flynn<sup>1</sup>, Anne Barker<sup>2</sup>  
<sup>1</sup>Faculty of Engineering – Ocean and Naval Architectural Engineering, Memorial University, St. John's, Canada  
<sup>2</sup>National Research Council of Canada, Canadian Hydraulics Centre, Ottawa, Canada
- POAC11-043 **ONE SEASON OF A 1 ST YEAR SEA ICE RIDGE INVESTIGATION WINTER 2009**  
13.50-14.10 Lucie Strub-Klein<sup>1</sup>, Knut V. Høyland<sup>2</sup>  
<sup>1</sup>The University Centre on Svalbard, UNIS, Longyearbyen, Norway  
<sup>2</sup>The Norwegian University of Technology, NTNU, Trondheim, Norway



## POAC'11- Program Overview