

Panel Abstracts

PANEL 1

MONITORING, MODELING AND MEASURING ATLANTIC MARINE FOG

Rachel Chang (Dalhousie), Joel Finnis (Memorial University), Shawn Allan (AMEC Foster Wheeler)

Frequent marine fog events in Atlantic Canada present a significant hazard to the region's marine industries. The impact of fog varies considerably by region and industry; it is recognized as a serious issue for oil and gas operations on the Grand Banks, but also exerts a poorly understood impact on fisheries, Coast Guard/Search & Rescue, and shipping. Despite the breadth of this impact, Atlantic marine fog has received relatively little research attention; this is beginning to change, however, in part due to industry investment and new observational opportunities. MEOPAR researchers and industry partners at Amec Foster Wheeler are leading much of this research, using records from offshore installations and buoys to examine climatology, develop conceptual fog models for the Grand Banks, and experiment with new instruments and forecasting techniques. Other research is focused on better quantifying the impacts of fog on workplace accidents/injuries. This panel will summarize these efforts, with description of statistical prediction techniques, fog characterization, and monitoring and forecasting initiatives.

PANEL 2

SHIPPING RISKS AND MARINE NOISE

Clément Chion (Université du Québec à Rimouski), Ronald Pelot (Dalhousie), Norma Serra Sogas (University of Victoria), Chris Taggart (Dalhousie)

One of MEOPAR's aims is to assess risks of activities on the ocean. As part of this, MEOPAR and exactEarth Ltd. have partnered to develop new models and applications using data from tracking ships. We are currently supporting 10 MEOPAR projects addressing various shipping risks. This panel is focussed on three of those projects, involving shipping and marine noise. The NEMES project (UVic) aims to map the intensity of underwater noise in an area through integrating information on vessel traffic densities with underwater recordings of transiting vessels. This information is crucial for assessing the potential effects of underwater noise on marine mammals and making informed decisions about noise management and mitigation. The 3MTSim model (UQO) involves underwater acoustic modelling. Recent simulations results will be presented, along with the implications to enhance the conservation of marine mammals in the St. Lawrence Estuary. Knowledge gaps regarding the impacts of noise on marine mammals will also be discussed. The WHaLE (Whales, Habitat and Listening Experiment) project (Dalhousie) involves ~20 receptor group and partners that are addressing the need for flexible and economic monitoring of at-risk-whales and vessels on the Atlantic and Pacific coast that provides vessel-whale strike-risk reduction information and response options. New knowledge derived from passive acoustic monitoring (PAM), oceanographic, and vessel automatic information system (AIS) observational data obtained from various platforms form the basis for characterizing and predicting the spatiotemporal distributions of at-risk whales, habitats, and vessel-threat leading toward a near real-time alert system that affords maritime operators the opportunity to respond to the unexpected presence of endangered whales with appropriate risk mitigation actions.

PANEL 3

ARCTIC MARINE TRANSPORTATION

Erin Abou-Abssi (Oceans North Canada), Natalie Carter (University of Ottawa), Jackie Dawson (University of Ottawa), Seyi Okuribido-Malcolm (Canadian Coast Guard), Randy Scharien (University of Victoria), Natasha Simonee (Mittimatalik Hunters & Trappers Organization - Pond Inlet), Tom Zagon (Canadian Ice Service)

Increased navigability of Arctic waters, as a result of climate change, is now intersecting with the global appetite for untapped natural resources and growing industrial and tourism traffic through Canada's Northwest Passage; a situation that is testing Canada's safety and security, and is challenging northern communities. Ship traffic in Arctic Canada increased by more than 75% between 2005 and 2015 prompting increased federal and territorial attention to identifying the risks, opportunities, and governance options for dealing with a changing Arctic marine transportation sector. The Northern Marine Transportation Corridors (NMTC) Initiative, co-led by the Canadian Coast Guard, Transport Canada, and the Canadian Hydrographic Service is the current framework for shipping governance in the region and is being used as a framework for servicing, supporting, and managing ship traffic. This panel brings together researchers and stakeholders to discuss the risks, challenges, opportunities, and governance solutions (including the NMTC) for the new frontier of Arctic marine transportation in Canada and the implications of changing sea ice. It is vital that research be used to support policy for and management of Arctic marine shipping in ways that ensure the establishment of a sustainable and prosperous Arctic Canada while also safeguarding northern ecosystems and respecting the rights and traditions of Indigenous northerners.

PANEL 4

SEA ICE MODELS AND DATA: WORKING TOGETHER FOR BETTER UNDERSTANDING AND PREDICTION

Brent Else (University of Calgary), Dany Dumont (Université du Québec à Rimouski), Christian Haas (Canadian Ice Service), Andrea Scott (University of Waterloo), Tom Zagon (Canadian Ice Service)

This panel will discuss this link between theoretical, numerical and observational efforts to understand and predict sea ice, with emphasis on the Canadian perspective. A brief introduction to sea ice models will be given, followed by presentation of important processes, such as wave-ice interactions, and sea ice energy balance. Available satellite and airborne data will then be discussed, with insight into how these data can and cannot be used for model development, validation and assimilation/initialization. The panel will wrap up with specific challenges in connecting data to models that are relevant to ice operations.

PANEL 5

RESEARCH AND LESSONS LEARNED FOR MOBILIZING KNOWLEDGE TO SUPPORT COASTAL ZONE MANAGEMENT AND CLIMATE RISK REDUCTION IN CANADA

Stephanie Chang (University of British Columbia), Adam Fenech (University of P.E.I.), Steve Plante (Université du Québec à Rimouski), Jason Thistlethwaite (University of Waterloo), Brennan Vogel (Western University)

Coastal management research presents challenges and opportunities for engaging stakeholder in knowledge mobilization. Bridging gaps between academia and civil society (e.g. Government, First Nations, Private Sector, NGOs) requires developing participatory, ethical research approaches that can sustain engagement with stakeholders in the translation of research findings to policy and practice. This is a component of an effective knowledge mobilization process and ostensibly a key tenet of ethical academic research in the context of climate change.

Inter-disciplinary research collaboration across knowledge domains offer opportunities to mobilize research in support of civil society stakeholders through social learning processes about complex issues, such as coastal climate risk. Mobilizing research findings with stakeholders can contribute to advancing vulnerability and risk reduction to climate impacts and other hazards present in Canadian coastal environments.

This panel will provide an opportunity for broadly discussing MEOPAR research involving stakeholder engagement. Panelists will share key inter-disciplinary research findings and opportunities for knowledge mobilization with engaged stakeholders, based on the various project's research results and next steps.

PANEL 6

KNOWLEDGE AND TECHNOLOGY EXPLOITATION AND EXCHANGE (KTEE) IN MEOPAR ENVIRONMENTAL MODELING

Susan Allen (University of Victoria), Jim Christian (University of Victoria), Keith Lennon (Fisheries and Oceans Canada), Daniel Kirschbaum (McGill University), Bill Merryfield (University of Victoria, Environment and Climate Change Canada), Hal Ritchie (Dalhousie, Environment and Climate Change Canada), Wei Yu (Environment and Climate Change Canada)

KTEE and partnerships are important aspects of MEOPAR environmental modelling activities in Cycle I and are anticipated to play an even more important role in Cycle II. This panel session will consist of short presentations by some environmental modelling principal investigators summarizing related achievements in their Cycle I projects and prospective interests in Cycle II, followed by discussion and questions and answers including end-users for MEOPAR environmental modelling research and development.

PANEL 7

OCEAN ACIDIFICATION

Susan Allen (University of Victoria), Alfonso Mucci (McGill University), Maurice Levasseur (Université Laval)

Abstract pending.