



## ARQULUK SYMPOSIUM

Permafrost Engineering for Transportation Infrastructure:  
Results of a Five-Year Research Program

**February 21<sup>st</sup>, 2018 - 8:30am – 5pm**  
Glass Classroom (C1440), Yukon College, Whitehorse

- 8h30 **INTRODUCTION**  
**Guy Doré** ing. PhD., Professor, Department of Civil and Water Engineering, Laval University
- 9h00 **Issues and Challenges of Permafrost Degradation and Adaptation of Yukon's Infrastructure.**  
**Paul Murchison** PEng, Director of Transportation Engineering, Department of Highways and Public Works, Government of Yukon
- 9h20 **Massive-Ice Detection Using the Geophysics Method of Gravimetry.**  
Benôit Loranger ing. jr. MSc., PhD. Candidate, NTNU - Norwegian University of Science and Technology and Laval University  
**Guy Doré** ing. PhD., Professor, Department of Civil and Water Engineering, Laval University  
Daniel Fortier PhD., Professor, Department of Geography, Université de Montréal
- 9h40 **Research Activities of the Northern Climate ExChange**  
**Brian Horton**, Manager, Northern Climate ExChange, Yukon Research Center
- 10h00 **BREAK**
- 10h30 **Pavement Profiles: Effect of Seasonal Frost and Permafrost Degradation.**  
Laurie-Anne Grégoire ing. jr. MSc., Englobe  
**Guy Doré** ing. PhD., Professor, Department of Civil and Water Engineering, Laval University  
Nicolas Martel ing. MSc, Englobe
- 10h50 **Mechanical Behavior of Marginally Frozen Soil.**  
Mathieu Durand-Jézéquel ing. jr. MSc., FP Innovations  
Guy Doré ing. PhD., Professor, Department of Civil and Water Engineering, Laval University  
**Jean-Pascal Bilodeau** ing. PhD., Research Engineer and Lecturer, Department of Civil and Water Engineering, Laval University
- 11h10 **Development of an Oedometric Core-Barrel for In Situ Characterization of Permafrost.**  
Cédric Flécheux ing. MSc., Toyota Boshoku Europe NV, Belgique  
**Guy Doré** ing. PhD., Professor, Department of Civil and Water Engineering, Laval University
- 11h30 **Monitoring the Inuvik Tuktoyaktuk Highway 10, NT**  
**Dean Ahmet**, PL(Eng.), BSc(Civil Eng.), MPM, PMP, Senior Program Manager, DOT - Government of the Northwest Territories

**LUNCH (11:50am – 1pm)**

Lunch will be courtesy of the Yukon Research Center.

- 13h00 **Development of a Methodology for the Design of Low-Impact Drainage Systems.**  
 Julie Malenfant-Lepage MSc., PhD. Candidate, Department of Civil and Water Engineering, Laval University  
 Loriane Périer ing. jr MSc., Stantec  
**Guy Doré** ing. PhD., Professor, Department of Civil and Water Engineering, Laval University  
 Daniel Fortier PhD., Professor, Department of Geography, Université de Montréal
- 13h20 **Monitoring Culvert Insulation on the Dempster Highway, Yukon Territory.**  
**Louis-Philippe Roy**, Climate Change and Permafrost Technical Analyst, Northern Climate ExChange, Yukon Research Center
- 13h40 **Development of Design Tools for Convective Mitigation Techniques to Preserve Permafrost Under Transportation Infrastructure.**  
**Xiangbing Kong** MSc., PhD. Candidate, Department of Civil and Water Engineering, Laval University  
 Guy Doré ing. PhD., Professor, Department of Civil and Water Engineering, Laval University  
 Fabrice Calmels, Research Associate, Northern Climate ExChange, Yukon Research Center
- 14h00 **Design Procedure Taking Into Account Accumulation of Snow Along Embankments.**  
 Florence Lanouette, MSc. Candidate, Department of Civil and Water Engineering, Laval University  
**Guy Doré** ing. PhD., Professor, Department of Civil and Water Engineering, Laval University  
 Daniel Fortier PhD., Professor, Department of Geography, Université de Montréal
- 14h20 **i3c Industrial Research Chair on the Interaction of Heavy Loads - Climat - Pavement**  
**Jean-Pascal Bilodeau**, ing. PhD., Research Engineer and Lecturer, Laval University  
 Guy Doré ing. PhD., Professor, Department of Civil and Water Engineering, Laval University
- 14h40 **BREAK**
- 15h10 **Thermal Stabilization of Transportation Infrastructure Built on Thaw-Sensitive Permafrost Using High Albedo Surface Treatments.**  
 Caroline Richard BSc., E.I.T., BGC Engineering Inc.  
 Simon Dumais MSc., PhD. Candidate, Department of Civil and Water Engineering, Laval University  
**Guy Doré** ing. PhD., Professor, Department of Civil and Water Engineering, Laval University  
 Jade Haure-Touzé, intern, Université de technologie de Troyes, France
- 15h30 **Assessing and Monitoring Permafrost along the Dempster Highway: Paving the Way for an Adaptation Strategy.**  
**Fabrice Calmels**, Research Associate, Northern Climate ExChange, Yukon Research Center
- 15h50 **Permafrost-supported linear infrastructure risk analysis tool: Presentation and Software Demonstration.**  
**Heather Brooks** PE. MSc., PhD. Candidate, Department of Civil and Water Engineering, Laval University  
 Guy Doré ing. PhD., Professor, Department of Civil and Water Engineering, Laval University  
 Ariane Locat ing. PhD., Professor, Department of Civil and Water Engineering, Laval University
- 16h50 **CONCLUSION**