

# Seminars

## Modern geotechnical monitoring practices

**GKM Consultants**

### BLOCK 1

#### Monitoring and metrology concepts

The goal of this block is to present an overview of the science of measurements as well as provide an introduction to the main families of geotechnical instruments available on the market.

Guest speaker:

**Jean-Marie Br  h  , Eng.**  
**GKM Consultants**

### BLOCK 2

#### Limitations in near real-time data

Near real-time data collection is becoming commonly requested in the application of geotechnical and structural instrumentation and monitoring. This block reviews the limitations of a program employed to collect data at a target frequency of five-minute intervals to monitor the performance of an existing tunnel and highway structure.

When approaching the practical limits of collection intervals, it is important to give specific consideration to the hardware required to ensure reliability and accuracy, and to avoid potential errors. It is also necessary to take into account the combination of all potential delays and failures when real-time alarms are required.

Guest speaker:

**Wesley Saunders, P.Eng.**  
**GKM Consultants**

### BLOCK 3

#### Moving your data

Communications are often the Achilles' heel of monitoring systems. A robust and well-thought-out system can ensure timely retrieval of data and generate large savings on major projects. This block provides an overview of the different means of communications typically used in monitoring systems. A case study will demonstrate the use of complex communications systems in a mine-tailing project.

Guest speaker:

**Vincent Le Borgne, Eng., Ph.D.**  
**GKM Consultants**

### BLOCK 4

#### Non-contact monitoring

In urban settings, reducing intrusion in public and private spaces is a strategic concern. Modern monitoring technologies based on non-contact sensing contribute greatly to improving monitoring performance while minimizing invasiveness. This block reviews two very popular solutions currently being used in urban underground construction. The Automated Motorized Total Stations provide versatile, accurate and continuous information on the 3D displacement and deformation of structures. The Interferometric Synthetic-Aperture Radar (INSAR) complements the ground instrumentation and provides a complete overview of the actual impact of the project in its environment.

Guest speaker:

**Loic Galisson, Eng., Sixense**

### BLOCK 5

#### Real-life instrumentation applications

This block presents case studies of major projects in which our partners were involved. They showcase the importance and necessity of using geotechnical instruments and a monitoring plan.

##### Calgary - April 23, 2019

Near real-time notification of a large, active, mining-related landslide

Guest speaker:

**Naia Suszek, M.Sc.**  
**Senior Instrumentation Engineer**  
**BGC Engineering Inc.**

##### Mississauga - April 25, 2019

Human role in Geo-Instrumentation - Technology Alone Isn't Enough

Guest speaker:

**Fernando Junqueira, D.Sc., M.Sc., P.Eng.**  
**Senior Geotechnical Engineer**  
**Golder Associates Ltd.**

### Schedule

**8:00 a.m. - 8:45 a.m.**

Welcome registration

**8:45 a.m. - 4:00 p.m.**

Seminar

(Lunch and coffee break included)

### Locations and dates

**April 23, 2019**

Alt Hotel

635 Confluence Way SE  
Calgary, Alberta T2G 0G1

**April 25, 2019**

Corporate Event Centre  
5110 Creekbank Road  
Mississauga, Ontario L4W 0A1

### Information

Please contact Kim Rheault:

[krheault@gkmconsultants.com](mailto:krheault@gkmconsultants.com)

450 441-5444, extension 206