PANAMGEO CHILE 2024
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LA SERENA • CHILE / NOVEMBER 12 - 16, 2024

Short Course | Geotechnical instrumentation and monitoring as a tool for decision making (The short course will be in english)

- **Summer Sun,** Geotechnical Engineer, Mining, Minerals and Metals at Stantec. Ph.D. in Geomechanics
- **Roberto Gesche,** Leader of Geosciences at Stantec - Adjunct Professor at the University of Chile

| **DATE:** november 12, 2024 | **DURATION:** Full Day

| **MINIMUM PARTICIPANTS: 15** | **MAXIMUM PARTICIPANTS: 30**

FEE: USD 350

INTRODUCTION/SUMMARY

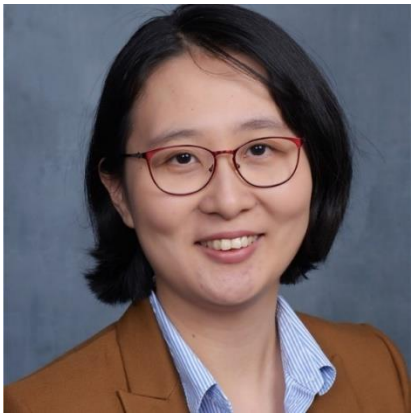
In this course, we will explore the crucial purpose and immense value of geotechnical instrumentation and the data obtained from these systems. You'll learn why monitoring is not just a regulatory compliance or a technical routine, but a strategic tool that can significantly mitigate risks and enhance the decision-making process in construction and maintenance of structures.

COURSE TOPICS

- **Purpose of Geotechnical Instrumentation and Monitoring:** We'll begin by setting the stage for why monitoring is integral to geotechnical engineering, highlighting the types of decisions and outcomes it influences.
- **Fundamental Concepts of Instruments:** This module covers the basics of the sensors and instruments used, including how they work and what physical properties they measure.
- **Invasive (Traditional) Instrumentation Systems**: Dive into traditional methods such as piezometers, extensometers and inclinometers, understanding their design, functionality, and applications.
- **Semi-invasive and Non-invasive Instrumentation Systems:** Learn about innovative approaches using radars, satellites, and other remote sensing technologies that offer new possibilities for monitoring without direct contact or minimal intrusion.
- **Sensor Installation and Commissioning:** A practical look at the steps and considerations for installing and commissioning sensors, ensuring reliable data from the start.
- **Data Monitoring Techniques:** Explore the techniques for data collection, transmission, and initial analysis, focusing on how modern technology has transformed these processes.
- **Databases and Data Visualization:** Understand how to effectively store, manage, and visualize data to make it accessible and useful for stakeholders.
- **Case Studies:** We'll examine real-world examples to see how geotechnical instrumentation and monitoring have been successfully implemented and the lessons learned from these projects.

SPEAKERS

Summer Sun



Dr. Sun joined Stantec as a geotechnical scientist in July 2018. Before joining Stantec, she was a geotechnical specialist with geoLyteca LLC and mainly working on levee geotechnical subsurface investigation, levee embankment stability assessment and earthquake engineering. She obtained her Ph.D. degree in Geomechanics from Georgia Institute of Technology. Back at Georgia Tech, she had extensive training in numerical modeling for unconventional rock mechanics and fluid-soil interaction.

Roberto Gesche

Civil Engineer specialized in Geotechnics and Infrastructure, with a 20-year+ career spanning diverse projects in Europe and South America. My journey began with an MSc in Geotechnics from Germany, followed by a pivotal 4-year stint at Arup in London, engaging in various engineering design projects across Europe. In 2010, I returned to Chile to collaborate with consulting firms advising the mining industry.

Presently, I balance my time between Stantec, concentrating on engineering projects related to tailings deposits, and a part-time academic role as a Lecturer in geotechnical subjects at the Civil Engineering Department of the Universidad de Chile in Santiago. At Stantec, I lead the geotechnical instrumentation and monitoring team supporting mining projects in Chile and Peru. I´m also the current Innovation lead for Stantec Latam.

From a research perspective, I'm currently undertaking investigations in tailings dam instrumentation that will lead to a Ph.D. from the RWTH Aachen University in Germany.

I am honoured to have served as the President of the Chilean Geotechnical Society for the 2022-2023 term.