

ARMA Future Leader Webinar Series

Every Two Weeks on Fridays 9-10 AM MT (11 AM -12 PM ET)

Geotechnical uncertainty in open pit operations - Leveraging performance information for optimization

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<https://westernuniversity.zoom.us/j/99355457319>

Abstract

This talk will discuss the sources of geotechnical uncertainty as they impact the open pit design and implementation workflow, and how uncertainty is reduced through the life cycle of an operation when rust performance monitoring and back analysis is in place. The talk then leverages this understanding to propose a means for optimizing open pit slope design, such that slope design reliability allow more aggressive designs that meet safety and economic safety objectives. The discussion includes notions of epistemic uncertainty in geotechnical design and during project implementation, with some recent studies on the role of uncertainty in the deformability of fractures as they have significant impact in the stability of an excavation.

Biography

Renato is an Associate Professor in the Department of Civil and Environmental Engineering at the University of Alberta, Edmonton, Canada. He has a BSc in Civil Engineering from the Catholic University of Peru and a PhD in Geotechnical Engineering from the University of Alberta. Renato has 20 years of practical experience and 15 years of research experience in civil and mining geotechnical projects, including site characterization, slope stability assessments, in-place and remote monitoring, and hazard and risk assessments; for natural and engineered slopes along transportation corridors, reservoir slopes, open pit mines, waste rock dumps, tailings storage facilities. Renato is active in research and industry projects, and his research has been published in over 70 peer reviewed journal articles.

