



LECTURE SERIES

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Auditorium (Main Floor)

C E M I
Centre for Excellence
in Mining Innovation



3D and 4D Expert Systems for Exploration Targeting and Geotechnical Hazard Assessment

Abstract Expert-system approaches to exploration prospectivity analysis using 2D maps are well established. They are an outcome of the automated map creation and spatial analysis capability provided by 2D GIS computer systems. The recent extension of these approaches to both 3D and 4D addresses important mining industry needs. For mineral exploration it means that exploration criteria that are fundamentally 3D, such as drillhole data or geophysical inversion results, can be integrated directly for targeting at depth. The pressing need for better tools for exploration at depth and under cover is answered in part by such technology. The same analysis techniques can be employed for the spatio-temporal 4D problem of geotechnical hazard assessment in deep underground mines. In this lecture a brief overview of the fundamental concepts, and the software workflow technologies for successful implementation, is provided through recent case study examples.

The CEMI Lecture Series is held in the Willet Green Miller Centre - Auditorium. Lectures are announced on the CEMI website and emailed to the mailing list.

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If you wish to be added to the mailing list for the CEMI Lecture Series and/or if you wish to make a presentation, suggest a topic or nominate a future speaker, please email us at webcast@miningexcellence.ca.



Dr. John McGaughey

Dr. John McGaughey, President of Mira Geoscience, has an academic background and extensive industry experience in applied geophysics and 3D earth modelling. He is a graduate of Queen's University, worked in various aspects of the upstream oil industry, and spent ten years at the Noranda Technology Centre as a Senior Scientist in their exploration and rock mechanics groups. His focus is earth modelling for mining and mineral exploration decision support. He is the founder of Mira Geoscience, an international software and consulting company specializing in 3D earth modelling and 3D-GIS applications for the mining industry since 1999.