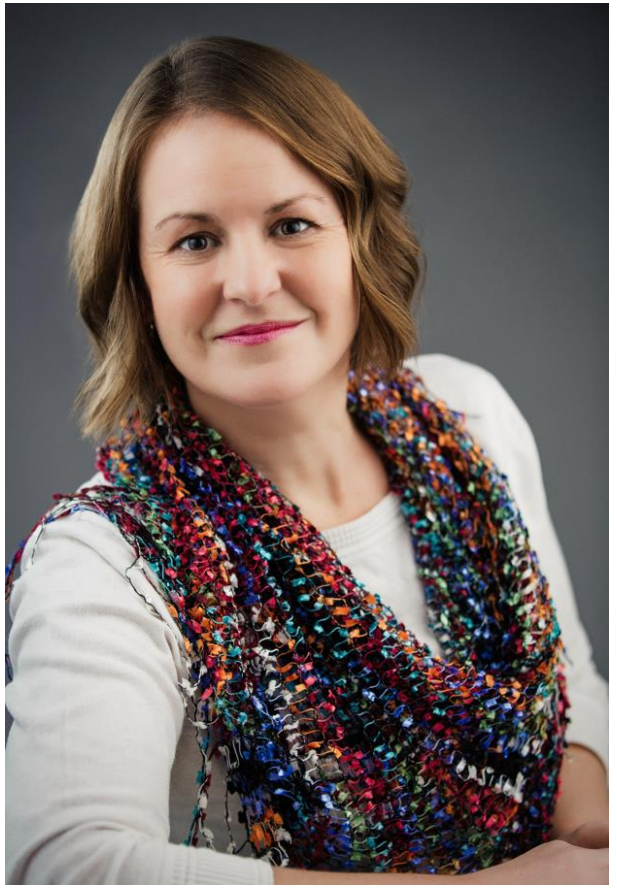
VI Seminario Peruano de
Geoingeniería
30 DE NOVIEMBRE
1 Y 2 DE DICIEMBRE
2022

Sociedad Peruana de Geoingeniería
Grupo Nacional del ISRM
International Society for Rock Mechanic and Rock Engineering
ISRM

Topic: "A Critical Input for Numerical Modelling in Geomechanics is Appropriately Complex In Situ Stress ".

Dr. Kalenchuk completed her Bachelor of Science in Mining Engineering at the University of Alberta (2004), and later achieved a Master's degree (2006) and Doctorate Degree (2010) in Gemechanical Engineering at Queen's University. She is currently the President of RockEng, and Adjunct Professor at Queen's Univeristy in Canada and serving on the American Rock Mechanics Association Board of Directors. Dr. K.S. Kalenchuk is an international Rock Mechanics Expert with 16 years of experience in geotechnical and geomechanical engineering. She has extensive experience in underground mining, induced seismicity, numerical modelling operational rock engineering, and ground control. She has contributed techncial expertise to more than 100 mining operations and projects world wide and published more than 60 journal papers, book chapters, and conference proceedings. Further Dr. Kalenchuk has also delivered keynote addresses and many invited lectures.



Kathy Kalenchuk

Conferencista Magistral

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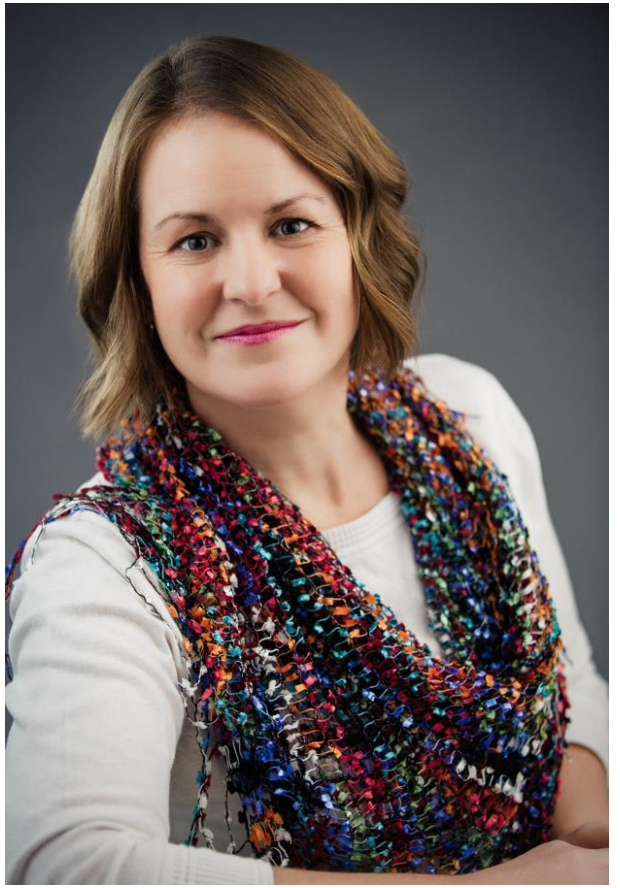
Virgin stress states in most geological settings are complex due to many factors including: the weight of overlying strata, plate tectonics and the geological history of a site. In nearly all geological settings, stress gradients (and rotations) occur between lithological units and across geological structures due to contrasting material stiffnesses and the natural strain history of a rock mass. Because virgin in situ stress states are rarely homogeneous, advanced numerical modelling requires that stress state be initialized in a numerical model through strain-based loading consistent with historical geological processes to capture virgin stress state gradients associated with natural stiffness contrasts. This keynote utilizes numerous calibrated mining case studies to demonstrates methodologies for strain-based stress initialization and provides comparison of results for strain-based stress initialization versus homogeneous stress tensor initialization to demonstrate the critical need for adequately capture natural in situ stress gradients in geomechanical engineering studies.



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