

Dr. Gabriel Walton

302C Jackson Drive, Golden, Colorado, United States
Tel: 720-560-8105 E-mail: g.walton@mines.edu

EDUCATION:

Ph.D. Geological Engineering, Queen's University
Supervisor: Dr. Mark S. Diederichs
Thesis Topic: Improving Continuum Models for Excavations in Rockmasses Under High Stress Through an Enhanced Understanding of Post-Yield Dilatancy
Enrolled in Master's Program Sept. 2011 – upgraded to Ph.D. program Oct. 2012
Graduated December 2014

Bachelor of Applied Science, Geological Engineering, Queen's University
Concentration: Applied Geophysics
Graduated Top of Class 2011

RELEVANT PROFESSIONAL EXPERIENCE:

Assistant Professor (Tenure-Track) – Colorado School of Mines
August 2015 - Present

Geomechanics Researcher – Mine Design Engineering
August 2014 – May 2015

Freelance Research Consultant – Walton Geocomputing
January 2013 – December 2014

Research Assistant – Queen's University
May 2010 – August 2010

EXAMPLE PEER-REVIEWED PUBLICATIONS:

- Walton, G.,** Diederichs, M.S., Punkkinen, A., Whitmore, J. A Pillar Monitoring and Back Analysis Experiment at 2.4 km Depth in the Creighton Mine. *International Journal of Rock Mechanics and Mining Sciences*. IJRMMS-D-15-00085R1. Revision submitted 24 November 2015. Under revision.
- Walton, G.,** Diederichs, M.S., & Punkkinen, A. 2015. The influence of constitutive model selection on predicted stresses and yield in deep mine pillars – a case study at the Creighton Mine, Sudbury, Canada. *Geomechanics and Tunneling*. DOI 10.1002/geot.201500023
- Walton, G.,** Lato, M., Anschutz, H., Perras, M.A., & Diederichs, M.S. 2015. Non-invasive detection of fractures, fracture zones, and rock damage in a hard rock excavation—Experience from the Äspö Hard Rock Laboratory in Sweden. *Engineering Geology*. DOI 10.1016/j.enggeo.2015.07.010
- Walton, G.** & Diederichs, M.S. 2015. A mine shaft case study on the accurate prediction of yield and displacements in stressed ground using lab-derived material properties. *Tunneling and Underground Space Technology*. DOI: 10.1016/j.tust.2015.04.010
- Walton, G.** & Diederichs, M.S. 2015. A new model for the dilation of brittle rocks based on laboratory compression test data with separate treatment of dilatancy mobilization and decay. *Geotechnical and Geological Engineering*. DOI :10.1007/s10706-015-9849-9
- Walton, G.** & Diederichs, M.S. 2015. Dilation and post-peak behaviour inputs for practical engineering analysis. *Geotechnical and Geological Engineering*. DOI 10.1007/s10706-014-9816-x
- Walton, G.,** Diederichs, M.S., Alejano, L.R., & Arzua, J. 2014. Verification of a lab-based dilation model for in-situ conditions using continuum models. *J. Rock Mech. and Geotech. Eng.* DOI 10.1016/j.jrmge.2014.09.004
- Walton, G.,** Arzua, J., Alejano, L.R., & Diederichs, M.S. 2014. A laboratory-testing based study on the strength, deformability, and dilatancy of carbonate rocks at low confinement. *Rock Mech. And Rock Eng.* DOI 10.1007/s00603-014-0631-8
- Walton, G.,** Delaloye, D., & Diederichs, M.S. 2014. Development of an Elliptical Fitting Algorithm for Tunnel Deformation Monitoring with Static Terrestrial LiDAR Scanning. *Tunn. and Underground Space Tech*, 43, 336-349. DOI 10.1016/j.tust.2014.05.014
- Arzua, J., Alejano, L., & **Walton, G.** 2014. Strength and dilation on jointed granitic samples during servo-controlled triaxial tests – a potential analogue for rock masses at the lab scale. *Int. J. of Rock Mech. and Min. Sci.*, 69, 93-104. DOI 10.1016/j.ijrmms.2014.04.001
- Delaloye, D., Diederichs, M.S., & **Walton, G.,** Hutchinson, J. 2014. Sensitivity Testing of a Newly Developed Elliptical Fitting Method for the Measurement of Convergence in Tunnels and Shafts. *Rock Mech. and Rock Eng.* DOI 10.1007/s00603-014-0566-0