Thamer E. Yacoub, Ph.D., P.Eng

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EDUCATION

- **Doctor of Philosophy, Civil Engineering** 1999
  University of Toronto, Ontario
- **Master of Science, Civil Engineering** 1992
  Baghdad, Iraq
- **Bachelor of Science, Civil Engineering** 1986
  Baghdad, Iraq

PROFESSIONAL EXPERIENCE

VP, Business development, Rocscience Inc., Toronto, ON 2011-Present

- Develop and manage company business plans
- Organize and deliver technical session for clients
- Provide consulting service on numerical analysis with the Finite Element and Boundary Element Methods.
- Present detailed courses on the subject of settlement analysis for both rigid and flexible footings

Geomechanics Specialist, Rocscience Inc, Toronto, ON 1999 – 2010

- Develop computer code and numerical algorithms for a variety of geomechanics programs, including finite element and boundary element analysis.
- Conduct research on the application of numerical analysis to practical geotechnical problems; apply geotechnical research findings to everyday excavation and slope stability problems.
- Perform detailed consulting services for mining and geotechnical consulting firms.
- Develop and conduct training seminars and workshops for Rocscience software users.
- Help organize and run Rocscience booth at trade shows.
- Present and explain Rocscience software, and their use in practical geotechnical engineering, to potential clients.
- Compile material for software manuals; write technical papers and reports.

Research Assistant, Dept. of Civil Engineering, University of Toronto, Ontario 1994 – 1999

- Analyzed and designed underground structures using Boundary and Finite Element Methods
- Evaluated and solved practical engineering case studies
- Defined and solved mathematical models for three-dimensional underground structures that involve cracks and joints for engineering problems
- Developed numerical software for the stress analysis of two- and three-dimensional slit-type problem in C/C++ language
- Performed statistical analysis and simulation of data using EXCEL and @Risk software
- Assessed use of different numerical models for geotechnical problems

PRESENTED TRAINING COURSES

- Design of support systems for underground excavations, June 2002, Toronto, ON
- Mine Modelling with Examine3D, Nov. 2000, Marathon, ON
- Analysis and design of slopes and retaining structures, June 2003, Sept. 2004, Sept. 2005, Toronto,

ON

- Geotechnical finite element analysis using *Phase*^{2}, Sept. 2003, June 2005, Sept. 2005, Toronto, ON

CONSULTING PROJECTS

- Numerical modelling for Naica Mine using Examine3D, Mexico
- Determination of mine sequencing for Golden Giant Mine, Canada
- Numerical modelling of proposed decant tank excavation at R.C. Harris Water Filtration Plant, Toronto, Canada
- Koala Underground feasibility study – stress analysis using *Examine*^{3D}, Yukon Territories, Canada

PUBLICATIONS

- Hazzard, J.F., Yacoub, T.E., Vijayakumar, S. and Curran, J., 2009, Calculating settlement for irregularly Shaped Rigid In Proceedings the 62th Canadian Geotechnical Conference; Halifax, Canada, September 2009
- J.F. Hazzard, T.E. Yacoub, J.H. Curran, Connsolidation in Multi-Layered Soils: A Hybrid Computation Scheme, Proceedings the 61th Canadian Geotechnical Conference; Edmonton, Canada, September 2008
- Hammah, R.E., Yacoub, T.E., Corkum, B., and Curran, J.H. 2008. The Practical Modelling of Discontinuous Rock Masses with Finite Element Analysis. In Proceedings of the 42nd U.S. Rock Mechanics Symposium – 2nd U.S.-Canada Rock Mechanics Symposium, San Fracisco, US, 2008.
- Hazzard, J.F., Yacoub, T.E., Vijayakumar, S. and Curran, J., 2007. Stresses under footings in multilayered soils: a comparative study. In Proceedings the 60th Canadian Geotechnical Conference and 8th Joint CGS/IAH-CNC Groundwater Specialty Conference; Ottawa, Canada, 1566-1570.
- Hammah, R.E., Yacoub, T.E., Corkum, B., Wibowo, F. and Curran, J.H. 2007. "Analysis of Blocky Rock Slopes with Finite Element Shear Strength Reduction Analysis," in Proceedings of the 1st Canada-U.S. Rock Mechanics Symposium. Vancouver, Canada.
- Hammah, R.E., Yacoub, T.E., Corkum, B., Wibowo, F. and Curran, J.H. 2007. "Serviceability-Based Slope Factor of Safety using the Shear Strength Reduction (SSR) Method," in Proceedings of the ISRM 11th International Congress on Rock Mechanics, July 9 – 13, Lisbon, Portugal.
- Hammah, R.E., Yacoub, T.E., and Curran, J.H. 2006. "Investigating the Performance of the Shear Strength Reduction (SSR) Method on the Analysis of Reinforced Slopes," Proceedings of the 59th Canadian Geotechnical and 7th Joint IAH-CNC and CGS Groundwater Specialty Conferences – Sea to Sky Geotechnique 2006, Vancouver, Canada.
- Hammah, R.E., Yacoub, T.E., and Curran, J.H. 2006. "The Influence of Young's Modulus on Numerical Modelling Results," Proceedings of the 41st U.S. Rock Mechanics Symposium, Golden Rocks 2006, 50 Years of Rock Mechanics, June 17-21, 2006, Colorado School of Mines, Golden, Colorado. Editors: David P. Yale, Sarah C. Holtz, Chris Breeds, and Ugur Ozbay.
- Hammah, R.E., Yacoub, T.E., Corkum, B., Curran, J.H. 2005. A Comparison of Finite Element Slope Stability Analysis with Conventional Limit-Equilibrium Investigation, Proceedings of the 58th Canadian Geotechnical and 6th Joint IAH-CNC and CGS Groundwater Specialty Conferences – GeoSask 2005, Saskatoon, Canada.
- Hammah, R.E., Yacoub, T.E., Corkum, B., Curran, J.H. 2005. The Shear Strength Reduction Method for the Generalized Hoek-Brown Criterion, Proceedings of the 40th U.S. Symposium on Rock Mechanics, Alaska Rocks 2005, Anchorage, Alaska.
- Hammah, R.E., Curran, J.H., Yacoub, T.E., and Corkum, B. 2004. Stability Analysis of Rock Slopes using the Finite Element Method, Proceedings of the ISRM Regional Symposium EUROCK 2004 and

the 53rd Geomechanics Colloquy, Salzburg, Austria.

- Miller, N., Kaiser. P., Hammah, R.E. and Yacoub, T.E. 2004. Impact of the 4th Generation Seismic Hazard Values on Tailings Dams in Canada, Proceedings of the Canadian Dam Association (CDA) 2004 Annual Conference, Ottawa, Canada, 2004.
- Hammah, R.E., Curran, J.H. and Yacoub, T.E. 2004. The Influence of Correlation and Distribution Truncation on Slope Stability Analysis Results, Proceedings of the 57th Canadian Geotechnical Conference, Quebec City, Canada.
- Hammah, R.E., Curran, J.H. and Yacoub, T.E. 2003. A Two-Dimensional Approach for Designing Tunnel Support in Weak Rock, Proceedings of the 56th Canadian Geotechnical Conference, Winnipeg, Canada.
- Curran, J.H., Hammah, R.E. and Yacoub, T.E. 2003. Can Numerical Modelling Tools assist in Mine Design? The Case of Golden Giant Mine, ISRM News Journal, Vol. 7, No. 3.
- Hammah, R.E., Curran, J.H., Yacoub, T.E., and J. Chew. 2001. Design of De-stress Slot at the Golden Giant Mine, Proceedings of DC Rocks, 38th U.S. Rock Mech. Symposium, Washington, D.C.
- Vijayakumar, S., Curran, J.H. and Yacoub, T.E. 2001. Node-centric displacement discontinuity method for plane elasticity problems, In Proceedings of the Tenth International Conference on Computer Methods and Advances in Geomechancis, Tuscan, Eds. C.S. Desai et al. 163-168.
- Yacoub, T.E. and Curran, J.H. 1999. Modeling of the post-peak behaviour of pillars using the enhanced displacement discontinuity method, 37th US Rock Mechanics Symposium.
- Yacoub, T.E. and Curran, J.H., Analysis of yielding pillars using enhanced displacement discontinuity method, Proc. 14th Mine Operators Conf., Bathurst Technical Program, N.B., 1999.
- Vijayakumar, S., Yacoub, T.E. and Curran, J.H. 1999. A node-centric indirect boundary element method: Three-dimensional displacement discontinuities, Computers and Structures.

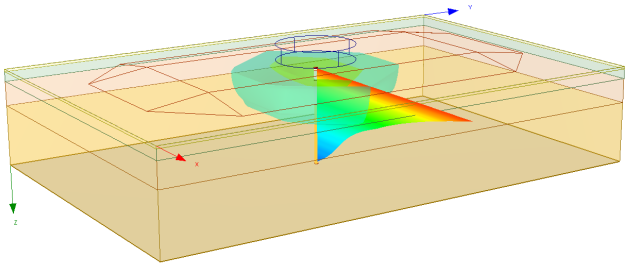
PROFESSIONAL MEMBERSHIPS

Member, Professional Engineers of Ontario (PEO)
Member, Canadian Geotechnical Society (CGS)
International Society for Rock Mechanics (ISRM)

TALLER DE CAPACITACION – DURACION UN DIA

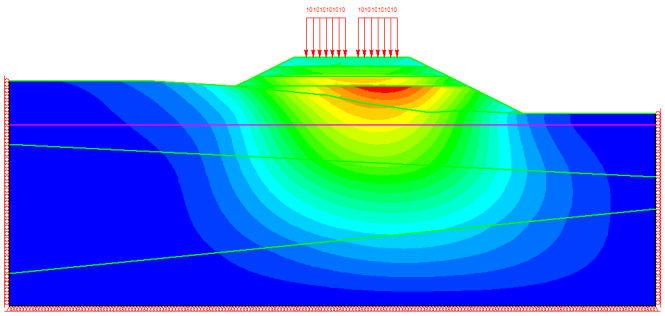
Herramientas de *Rocscience* para Análisis de Asentamientos en Suelos

El objetivo de éste curso es proporcionar conocimientos en modelación numérica para que el participante pueda realizar análisis de asentamientos mediante el empleo de las distintas herramientas de *Rocscience*. El participante podrá obtener un mayor provecho de herramientas como: *Settle*^{3D}, *RS*^{2} y *RS*^{3} a través de la exposición y explicación de una gran variedad de conceptos teóricos, así como de consejos prácticos en la parte computacional además de analizar ejemplos prácticos desarrollados y seleccionados a lo largo de todos éstos años.



Módulo I: Análisis de Consolidación y Asentamiento de Cimentaciones

- Esfuerzos y asentamientos de cimentaciones en suelos con múltiples estratos (*Settle*^{3D})
- Análisis de cimentaciones rígidas y flexibles (*Settle*^{3D})
- Análisis de la técnica acelerada de consolidación (*Settle*^{3D})

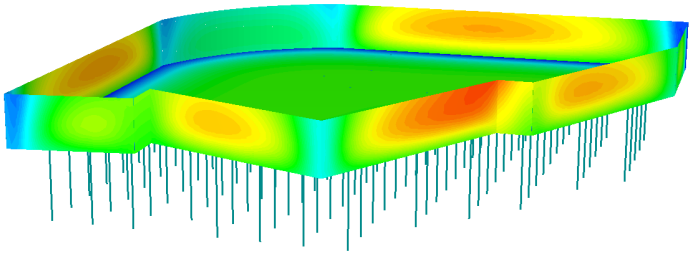


Módulo II: Análisis de Agua Subterránea

- Condiciones de borde
- Funciones para la permeabilidad del material
- Modelación de drenes (*RS*^{2} & *RS*^{3})

Módulo III: Análisis Acoplado y Aislado de Asentamientos

- Análisis Plásticos y Elásticos No-Lineales en suelos (*RS*^{2})
- Introducción a la modelación de suelos mejorados (*RS*^{2})
- Análisis de suelos no drenados (*RS*^{2})



Módulo IV : Análisis de Pilotes, Losas Flotantes y Presas

- Análisis de pilotes (*RS*^{3})
- Cimentaciones flotantes con pilotes (*RS*^{3})
- Análisis de presas y diques (*RS*^{3})