

PUBLICATIONS

- Xing, P., Moore, J., Damjanac, B., & McLennan, J. (2024). Investigation of thermal cooling effect of long-term circulation in Raft River enhanced geothermal system. *Geothermics*, 120, 103026.
- Lorig, L., Martin, C. D., Damjanac, B., Varun, Thielsen, C., Xing, P., & de Alba, F. G. (2024). Stability analysis of open pit slopes during heavy rainfall. In *Proceedings, Slope Stability 2024 (Nova Lima, Brazil, April 2024)*.
- Radakovic-Guzina, Z., Damjanac, B., Fu, W., Finnila, A., Podgorney, R., & McLennan, J. (2024). Coupled Hydro-Mechanical Back-Analysis of Circulation Program at FORGE in July of 2023. *49th Workshop on Geothermal Reservoir Engineering (Stanford University, Stanford, California, February 2024)*, SGP-TR-227.
- Fu, W., Damjanac, B., Radakovic-Guzina, Z., Finnila, A., Podgorney, R., & McLennan, J. (2024). Near-Wellbore DEM Model of Hydraulic Fracture Initiation for Utah FORGE Site. *49th Workshop on Geothermal Reservoir Engineering (Stanford University, Stanford, California, February 2024)*, SGP-TR-227.
- Fu, W., Damjanac, B., Ghazvinian, E., & Fuenzalida, M. (2023). Simulating Hydraulic Fracturing with Varied Well Placement for Preconditioning in Cave Mining. In *Proceedings, 57th U.S. Rock Mechanics/Geomechanics Symposium (ARMA, Atlanta, Georgia, June 2023)*, ARMA 23-823.
- Detournay, C., Damjanac, B., Torres, M., & Han, Y. (2023). Study of Hydraulic Fracture Interference with a Lattice Model. In *Mechanics of Hydraulic Fracturing: Experiment, Model, and Monitoring*, 75–86. Hoboken: Wiley.
- Radakovic-Guzina, Z., Damjanac, B., Lam, T., & Kasani, H. A. (2023). Numerical Simulation of Long-Term Performance of Deep Geological Repository Placement Rooms in Crystalline and Sedimentary Rocks. *Computers and Geotechnics*, 157, 105348.
- Varun, Radakovic-Guzina, Z., Damjanac, B., & Hardin, E. (2022). Modeling Internal Degradation and Crushing of Dual-Purpose Canisters. In *Proceedings, WM2022 Conference (Phoenix, Arizona, March 2022)*, 22284.
- Radakovic-Guzina, Z., Damjanac, B., Lam, T., & Kasani, H. A. (2022). DEM-Based Methodology for Simulation of Long-Term Geomechanical Performance of a Placement Room in a Deep Geological Repository. *Rock Mech Rock Eng.* <https://doi.org/10.1007/s00603-022-03188-w>.
- Detournay, C., Damjanac, B., Torres, M., Cundall, P., Ligocki, L., & Gil, I. (2022). Heat Advection and Forced Convection in a Lattice Code – Implementation and Geothermal Applications. *Rock Mechanics Bulletin*, 100004.
- Radakovic-Guzina, Z., Damjanac, B., Savitski, A., & Suarez, N. (2022). Analysis of the Production Casing Deformation Due to Shearing of Offset Hydraulic Fractures. In Paper 3721664. Presented at the URTeC 2022 (Proceedings, Unconventional Resources Technology Conference, Houston, Texas, June 2022).
- Blanksma, D., Hazzard, J., Damjanac, B., Lam, T., & Kasani, H. A. (2022). Effect of Fault Reactivation on Deformation of Off-fault Fractures near a Generic Deep Geological Repository in Crystalline Rock in Canada. *J. Seismol.* doi.org/10.1007/s10950-022-10096-7.

Radakovic-Guzina, Z., Damjanac, B., & Kasani, H. A. (2021). Numerical Study of Performance of Placement Rooms for Deep Geological Isolation of High-Level Radioactive Waste. In *Proceedings, International Conference on Radioactive Waste Management: Solutions for a Sustainable Future (Vienna, Austria, November 2021)*, IAEA-CN-294.

Furtney, J., Damjanac, B., & Hardin, E. (2021). Numerical Investigation of Deformation, Mass Flow, and Heat Transfer During a Criticality Event in a Dual-Purpose Canister. In *Proceedings, WM2021 (Phoenix, Arizona, March 2021)*, 21310.

Furtney, J. K., Damjanac, B., Le Goc, R., De Simone, S., & Pinier, B. (2021). Three-Dimensional Explicit Fracture Representation to Better Understand Thermo-Hydro-Mechanical Effects in Enhanced Geothermal Reservoirs. In *Proceedings, 55th U.S. Rock Mechanics/Geomechanics Symposium (ARMA, Houston, Texas, June 2021)*, ARMA 21-1967. Alexandria, Virginia: ARMA.

Cheng, Z., & Damjanac, B. (2021). Extension of Mohr-Coulomb Model Considering Opening and Closure of Tension Cracks. In *Proceedings, 55th U.S. Rock Mechanics/Geomechanics Symposium (ARMA, Houston, Texas, June 2021)*, ARMA 21-1157. Alexandria, Virginia: ARMA.

Damjanac, B., Torres, M., & Detournay, C. (2021). Modeling the Effect of a Natural Fracture Network and Its Properties on Multi-Stage Stimulation. In *Proceedings, Unconventional Resources Technology Conference (URTeC, Houston, Texas, July 2021)*, URTeC: 5285.

Wang, T., Zhang, F., Furtney, J., & Damjanac, B. (2021). A review of methods, applications and limitations for incorporating fluid flow in the discrete element method. *Journal of Rock Mechanics and Geotechnical Engineering*, 14(3), 1005–1024. <https://doi.org/10.1016/j.jrmge.2021.10.015>

Xing, P., Damjanac, B., Moore, J., & McLennan, J. (2021). Flowback Test Analyses at the Utah Frontier Observatory for Research in Geothermal Energy (FORGE) Site. *Rock Mechanics and Rock Engineering*, <https://doi.org/10.1007/s00603-021-02604-x>.

Xing, P., Damjanac, B., Radakovic-Guzina, Z., Finnila, A., Podgorney, R., Moore, J., & McLennan, J. (2021). Numerical Simulation of Hydraulic Fracturing Stimulation of the Enhanced Geothermal System Well at Utah FORGE Site. In *Proceedings, 55th U.S. Rock Mechanics/Geomechanics Symposium (ARMA, Houston, Texas, June 2021)*, ARMA 21-1168. Alexandria, Virginia: ARMA.

Xing, P., Damjanac, B., Radakovic-Guzina, Z., Finnila, A., Podgorney, R., Moore, J., & McLennan, J. (2021). Numerical Simulation of Injection Tests at Utah FORGE Site. In *Proceedings, 46th Workshop on Geothermal Reservoir Engineering (Stanford University, Stanford, California, February 2021)*, SGP-TR-218.

Ghazvinian, E., Damjanac, B., Lorig, L., Cavieres, P., & Madrid, A. (2020). Back Analysis of the Effect of Hydraulic Fracturing Preconditioning on Mining-Induced Seismicity at the Main Access of New Mine Level Project, CODELCO Chile - El Teniente Division. In *MassMin 2020 (Proceedings, Eight International Conference & Exhibition on Mass Mining, Virtual Conference, December 2020)*, 249–263. Santiago: University of Chile.

Damjanac, B., Detournay, C., & Cundall, P. (2020). Numerical Simulation of Hydraulically Driven Fractures. in Shen, B., Stephansson, O., Rinne, M. (Eds), *Modelling Rock Fracturing Processes*, pp. 531–561. Springer. doi:10.1007/978-3-030-35525-8_20.

Zhao, K., Stead, D., Kang, H., Damjanac, B., Donati, D., & Gao, F. (2020). Investigating the Interaction of Hydraulic Fracture with Pre-Existing Joints Based on Lattice Spring Modeling. *Computers and Geotechnics*, 122, 103534.

Wan, X., Rasouli, V., Damjanac, B., & Pu, H. (2020). Lattice Simulation of Hydraulic Fracture Containment in the North Perth Basin. *188*, 106904.

Bastola, S., Cai, M., & Damjanac, B. (2020). Slope Stability Assessment of an Open Pit Using Lattice-Spring-Based Synthetic Rock Mass (LS-SRM) Modeling Approach. *Journal of Rock Mechanics and Geotechnical Engineering*, 12(5), 927–942.

Furtney, J., Riahi, A., Damjanac, B., & Hardin, E. (2020). A Numerical Investigation of the Mechanical Response of Dual-Purpose Canisters to Internal Pressurization. In *Applied Numerical Modeling in Geomechanics 2020 (Proceedings, 5th International Itasca Symposium, February 2020)*, Paper 12-01. Minneapolis, Minnesota: Itasca.

Mehrabifard, A., Eberhardt, E., & Damjanac, B. (2020). Numerical Simulation of a Laboratory Experiment Testing Hydraulic Fracture Initiation Monitored by Acoustic Emission. In *Applied Numerical Modeling in Geomechanics 2020 (Proceedings, 5th International Itasca Symposium, February 2020)*, Paper 07-03. Minneapolis, Minnesota: Itasca.

Varun, Damjanac, B., & Hardin, E. (2020). Modeling Transport of Corrosion Products in Multi-Purpose Canisters Using PFC3D. In *Applied Numerical Modeling in Geomechanics 2020 (Proceedings, 5th International Itasca Symposium, February 2020)*, Paper 12-05. Minneapolis, Minnesota: Itasca.

Varun, Riahi, A., Damjanac, B., & Hardin, E. (2020). Modeling Degradation of Dual-Purpose Canisters Using 3DEC. In *Applied Numerical Modeling in Geomechanics 2020 (Proceedings, 5th International Itasca Symposium, February 2020)*, Paper 12-02. Minneapolis, Minnesota: Itasca.

Huang, L., Liu, J., Zhang, F., Fu, H., Zhu, H., & Damjanac, B. (2020). 3D Lattice Modeling of Hydraulic Fracture Initiation and Near-Wellbore Propagation for Different Perforation Models. *Journal of Petroleum Science and Engineering*, 191.

Zhang, F., Damjanac, B., & Maxwell, S. (2019). Investigating Hydraulic Fracturing Complexity in Naturally Fractured Rock Masses Using Fully Coupled Multiscale Numerical Modeling. *Rock Mech. Rock Eng.* 52, 5137–5160.

Huang, L., Liu, J., Zhang, F., Dontsov, D. E., & Damjanac, B. (2019). Exploring the influence of rock inherent heterogeneity and grain size on hydraulic fracturing using discrete element modeling. *International Journal of Solids and Structures*, 176-177, 207–220.

Bakhshi, E., Rasouli, V., Ghorbani, A., Fatehi Marji, M., Damjanac, B., & Wan, X. (2019). Lattice Numerical Simulations of Lab-Scale Hydraulic Fracture and Natural Interface Interaction. *Rock Mechanics and Rock Engineering*, 52(5) 1315–1337.

Zhang, F., Damjanac, B., & Maxwell, S. (2019). Investigating Hydraulic Fracturing Complexity in Naturally Fractured Rock Masses Using Fully Coupled Multiscale Numerical Modeling. *Rock Mechanics and Rock Engineering*, 52(12) 5137–5160.

Riahi, A., Pettitt, W., Damjanac, B., Varun, & Blanksma, D. (2019). Numerical Modeling of Discrete Fractures in a Field-Scale FORGE EGS Reservoir. *Rock Mechanics and Rock Engineering*, 52(12) 5245–5258. 2019.

Akash, O., Vamegh, R., Djabelkhir, N., Badrouchi, F., Damjanac, B., & Zhang, F. (2019). Lattice Simulations of Hydraulic Fracture Reorientation from Perforations. In *Proceedings, 53rd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, New York City, June 2019)*, ARMA 19-240. Alexandria, Virginia: ARMA.

Badrouchi, F., Wan, X., Bouchakour, I., Akash, O., Rasouli, V., & Damjanac, B. (2019). Lattice Simulation of Fracture Propagation in the Bakken Formation. In *Proceedings, 53rd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, New York City, June 2019)*, ARMA 19-250. Alexandria, Virginia: ARMA.

Djabelkhir, N., Song, X., Xincheng, W., Omar, A., Rasouli, V., & Damjanac, B. (2019). Notch Driven Hydraulic Fracturing in Open Hole Completions: Numerical Simulations of Lab Experiments. In *Proceedings, 53rd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, New York City, June 2019)*, ARMA 19-361. Alexandria, Virginia: ARMA.

Qiu, D., Vamegh, R., Damjanac, B., & Wan, X. (2019). Narrow versus Wide Fairway Fracture Geometry. In *Proceedings, 53rd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, New York City, June 2019)*, ARMA 19-1555. Alexandria, Virginia: ARMA.

Wan, X., Rasouli, V., Damjanac, B., Torres, M., & Qiu, D. (2019). Numerical Simulation of Integrated Hydraulic Fracturing, Production and Refracturing Treatments in the Bakken Formation. In *Proceedings, 53rd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, New York City, June 2019)*, ARMA 19-104. Alexandria, Virginia: ARMA.

Varun, Damjanac, B., Lorig, L., Aglawe, J., & Mallick, R. R. (2018). Dynamic Analyses of Side Abutments of Chenab Bridge. In *Proceedings, 16th Symposium on Earthquake Engineering (Roorkee, India, December 2018)*, Paper No. 224.

Blanksma, D., Blake, K., Pettitt, W., Sabin, A., Varun, & Damjanac, B. (2018). Using Borehole Induced Structure Measurements at Fallon FORGE Combined with Numerical Modeling to Estimate In-Situ Stresses. In *Proceedings, 43th Workshop on Geothermal Reservoir Engineering (Stanford University, Stanford, California, February 2018)*, SGP-TR-213.

Pettitt, W., Riahi, A., Hazzard, J., Damjanac, B., Blanksma, D., Varun, Furtney, J., Blankenship, D., Sonnenthal, E., & Kennedy, M. (2018). Conceptual Reservoir Design at Fallon FORGE Using Geomechanical Models with Natural and Induced Fractures. In *GRC Transactions (Proceedings, Geothermal Resources Council Annual Meeting & Expo, Reno, Nevada, October 2018)*, Vol. 42, GRC.

Xing, P., Yoshioka, K., Adachi, J., El-Fayoumi, A., Damjanac, B., & Bungler, A. P. (2018). Lattice Simulation of Laboratory Hydraulic Fracture Containment in Layered Reservoirs. *Computers and Geotechnics*, 100, 62–75.

Corkum, A. G., Damjanac, B., & Lam, T. (2018). Variation of Horizontal in Situ Stress with Depth for Long-Term Performance Evaluation of the Deep Geological Repository Project Access Shaft. *Int. J. Rock Mech. Min. Sci.*, 107, 75–85.

Damjanac, B., Maxwell, S., Pirayehgar, A., & Torres, M. (2018). Numerical Study of Stress Shadowing Effect on Fracture Initiation and Interaction Between Perforation Clusters. In *Proceedings, URTEC 2019 (Unconventional Resources Technology Conference, Houston, Texas, July 2018)*. Unconventional Resources Technology Conference.

Riahi, A., Pettitt, W., Damjanac, B., Varun, & Blanksma, D. (2018). Numerical Modeling of Discrete Fractures in a Field-Scale FORGE EGS Reservoir. In *Proceedings, 52nd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, June 2018, Seattle, Washington)*, ARMA 18-1197. Alexandria, Virginia: ARMA.

Riahi, A., Varun, & Damjanac, B. (2018). DFN Simplifying Approaches Applied to the Discrete Element Modeling of EGS Reservoirs. In *DFNE 2018 (Proceedings, 2nd International Discrete Fracture Network Engineering Conference, Seattle, Washington, June 2018)*, 18–001213. ARMA.

Ayling, B., Blankenship, D., Sullivan, P., Kennedy, M., Majer, E. L., Villavert, M., Sonnenthal, E., Tang, J., Dobson, P., Hinz, N., Faulds, J., Hammond, W., Mlawsky, E., Blake, K., Tiedeman, A., Sabin, A., Lazaro, M., Akerley, J., Nordquist, J., Sophy, M., Siler, D. L., Kaven, J. O., Phelps, G., Hickman, S., Glen, J., Williams, C., Robertson-Tait, A., Hackett, L., Pettitt, W., Riahi, A., Blanksma, D., Damjanac, B., Hazzard, J., Eneva, M., Witter, J. B., Queen, J., Fortuna, M. (2018). Phase 2 Update for the Fallon FORGE Site, Nevada, USA. *Proceedings, 43rd Workshop on Geothermal Reservoir Engineering (Stanford University, Stanford, California, February 2018)*, SGP-TR-213.

Damjanac, B. (2017). Long-Term Strength of Crystalline Rocks. In *Progressive Rock Failure Conference and Workshop 2017 (Monte Verità, Switzerland, June 2017)*, 150–153. Zurich: ETH Zurich.

Riahi, A., Moncarz, P., Kolbe, W., & Damjanac, B. (2017). Innovative Closed-Loop Geothermal Well Designs Using Water and Super Critical Carbon Dioxide as Working Fluids. In *Proceedings, 42nd Workshop on Geothermal Reservoir Engineering (Stanford University, Stanford, California, February 2017)*, SGP-TR-212.

Damjanac, B., & Cundall, P. (2017). Effect of Jointing and Initial Stress State on Coupled Hydro-Mechanical Processes in Rock Masses. *Hydraulic Fracturing Journal*, 4(1), 92–100.

Cundall, P. A., Damjanac, B., & Varun. (2016). Considerations on Slope Stability in a Jointed Rock Mass. In *50th US Rock Mechanics/Geomechanics Symposium (Proceedings, ARMA, Houston, June 2016)*, ARMA-16-0339. Alexandria, Virginia: ARMA.

Damjanac, B., Radakovic-Guzina, Z., & Lam, T. M. (2016). Long-Term Stability Analysis of DGRs in Crystalline and Sedimentary Settings. In *3rd Canadian Conference on Nuclear Waste Management, Decommissioning and Environmental Restoration (Ottawa, September 2016)*. Toronto: Canadian Nuclear Society.

Detournay, C., Cundall, P., & Damjanac, B. (2016). A Study of Fracture Interference in 3D with XSite. In *Applied Numerical Modeling in Geomechanics — 2016 (Proceedings, 4th Itasca Symposium on Applied Numerical Modeling, Lima, March 2016)*, pp. 607–616, P. Gómez, C. Detournay, R. Hart, and M. Nelson, Eds. Minneapolis: Itasca.

Damjanac, B., & Cundall, P. (2016). Application of Distinct Element Methods to Simulation of Hydraulic Fracturing in Naturally Fractured Reservoirs. *Computers and Geotechnics*, 71, 283–294.

Riahi, A., Radakovic-Guzina, Z., Damjanac, B., & Katsaga, T. (2015). Three-Dimensional Numerical Investigation of the Effect of Injection Method on Shear Stimulation of Enhanced Geothermal Reservoirs. In *Proceedings, 49th US Rock Mechanics/Geomechanics Symposium (ARMA, San Francisco, June 2015)*, ARMA 15-869. Alexandria, Virginia: ARMA.

Damjanac, B., Cundall, P., & Detournay, C. (2015). Application of Particle and Lattice Codes to Simulation of Hydraulic Fracturing. *Comp Part Mech*, doi: 10.1007/s40571-015-0085-0.

Damjanac, B., DeGagne, D. O., Katsaga, T., Riahi, A., & Valley, B. (2015). Hydraulic Fracturing Operations in Mining: Conceptual Approach and DFN Modeling Example. *Mining Technology*, 124(4), 255–266.

Damjanac, B., Maxwell, S. C., & Zhang, F. (2015). Geomechanical Modeling of Induced Seismicity Resulting from Hydraulic Fracturing. *The Leading Edge*, 34(6), 678–680, 682–683.

Damjanac, B., Maxwell, S. C., & Zhang, F. (2015). Modeling of Fault Activation Induced by Hydraulic Fracturing – A Horn River Basin Case Study. *Hydraulic Fracturing Journal*, 2(1), 26–33, January 2015.

Damjanac, B., Pierce, M., & Board, M. (2014). Methodology for Stability Analysis of Large Room-And-Pillar Panels. In *Proceedings, 48th US Rock Mechanics/Geomechanics Symposium (Minneapolis, Minnesota, June 2014)*, ARMA 14-7660. Alexandria, Virginia: ARMA.

Damjanac, B., Pettitt, W., & Hazzard, J. (2014). Fracture Network Engineering for Hydraulic Fracturing. In *Proceedings, 1st International Symposium on Energy Challenges and Mechanics (Aberdeen, Scotland, UK, July 2014)*. Journal of Energy Challenges & Mechanics.

Riahi, A., Furtney, J., & Damjanac, B. (2014). Evaluation of Optimum Well Positioning in Enhanced Geothermal Reservoirs using Numerical Modeling. In *Transactions — Geothermal Resources Council 38 (Proceedings, 38th GRC Meeting, Portland, Oregon, September 28-October 1, 2014)*, pp. 325–330.

Damjanac, B. (2014). Discrete Element Modeling of Fractured Reservoirs. Presented at ARMA, 48th US Rock Mechanics/Geomechanics Symposium (Minneapolis).

Damjanac, B., & Cundall, P. (2014). Application of Distinct Element Methods to Simulation of Hydraulic Fracturing in Naturally Fractured Reservoirs. Presented at *HYDROFRAC 2014 (Proceedings, International Conference on Recent Advances in Numerical Simulation of Hydraulic Fracture, Rzeszów, Poland, 2014)*.

Katsaga, T., Riahi, A., & Damjanac, B. (2014). Integration of Three-Dimensional Discrete Fracture Network in Numerical Modelling of Hydraulic Treatments. In *DFNE 2014 (Proceedings, International Discrete-Fracture Network Engineering Conference, Vancouver, Canada)*. Paper No. DFNE 2014-159. CARMA, ARMA.

Damjanac, B., Cundall, P. A., & Varun. (2013). Validation of Lattice Approach for Rock Stability Problems. In *47th US Rock Mechanics / Geomechanics Symposium (San Francisco, California, June 2013)*. Paper No. ARMA 13-488. Alexandria, Virginia: ARMA.

Damjanac, B., Detournay, C., Cundall, P. A., & Varun. (2013). Chapter 41: Three-Dimensional Numerical Model of Hydraulic Fracturing in Fractured Rock Masses. In *Effective and Sustainable Hydraulic Fracturing*. doi: 10.5772/56313, A. P. Bungler, J. McLennan, and R. Jeffrey, Eds. InTech.

Damjanac, B., & Varun. (2013). Seismic Stability of Large Open Pit Slopes and Pseudo-Static Analysis. In *Slope Stability 2013 (Proceedings, The 2013 International Symposium on Slope Stability in Open Pit Mining and Civil Engineering, Brisbane, Australia, September 2013)*, pp. 1203–1216, P. Dight, Ed. Perth, Australia: ACG.

Detournay, C., Cundall, P. A., & Damjanac, B. (2013). Hydraulic Fracture Simulation: Comparison with Exact Solutions. In *Research and Applications in Structural Engineering, Mechanics and Computation (Proceedings, SMEC 2013, Cape Town, South Africa, September 2013)*, pp. 603–608, A. Zingoni, Ed. Leiden, Netherlands: CRC Press/Balkema.

Diederichs, M., Damjanac, B., Jensen, M., Lam, T., Martin, D., & McCreath, D. (2013). Ultra-Long-Term Geomechanics Design for a Deep Geological Repository. In *Proceedings, 47th US Rock Mechanics / Geomechanics Symposium (San Francisco, California, June 2013)*. ARMA 13-532. Alexandria, Virginia: ARMA.

Hazzard, J. F., & Damjanac, B. (2013). Further Investigations of Microseismicity in Bonded Particle Models. In *Continuum and Distinct Element Numerical Modeling in Geomechanics - 2013 (Proceedings, 3rd International FLAC/DEM Symposium, Hangzhou, China, October 2013)*. Paper: 06-01, H. Zhu, C. Detournay, R. Hart, and M. Nelson, Eds. Minneapolis: Itasca.

Riahi, A., & Damjanac, B. (2013). Numerical Study of the Interaction between Injection and the Discrete Fracture Network in Enhanced Geothermal Reservoirs. In *Proceedings, 47th US Rock Mechanics / Geomechanics Symposium (San Francisco, California, June 2013)*. ARMA 13-333. Alexandria, Virginia: ARMA.

Riahi, A., & Damjanac, B. (2013). Chapter 13: Numerical Study of Interaction between Hydraulic Fracture and Discrete Fracture Network. In *Effective and Sustainable Hydraulic Fracturing*, doi: 10.5772/56416, A. P. Bungler, J. McLennan, and R. Jeffrey, Eds. InTech.

Zhang, F., Damjanac, B., & Huang, H. (2013). Coupled Discrete Element Modeling of Fluid Injection Into Dense Granular Media. *J. Geophys. Res. Solid Earth*, 118, 1–20.

Damjanac, B., Martin, D., Diederich, M., McCreath, D., & Lam, T. (2012). Long-Term Stability for a Proposed Nuclear Waste Deep Geological Repository: Bruce Nuclear Site, Ontario, Canada. In *Rock Engineering and Technology for Sustainable Underground Construction — EUROCK (Proceedings, ISRM International Symposium, Stockholm, May 2012)*. Stockholm: Rock Engineering Research Foundation & Swedish National Group of ISRM (BeFo).

Han, Y., Damjanac, B., & Nagel, N. (2012). A Microscopic Numerical System for Modeling Interaction Between Natural Fractures and Hydraulic Fracturing. In *46th U.S. Rock Mechanics / Geomechanics Symposium (Proceedings, ARMA, Chicago, June 2012)*. Paper No. 12-238. Alexandria, Virginia: ARMA.

Hazzard, J., Damjanac, B., Detournay, C., & Lorig, L. (2012). Numerical Investigation of Flow Regimes in Fractured Rock Slopes. In *21st Canadian Rock Mechanics Symposium: RockEng12 — Rock Engineering for Natural Resources (Proceedings, CARMA, Edmonton, Canada, May 2012)*, pp. 161–168, C. Hawkes, Ed. Westmount, Quebec: CARMA, CIMICM.

Pettitt, W. S., Hazzard, J. F., Damjanac, B., Han, Y. H., Pierce, M., Katsaga, T., & Cundall, P. A. (2012). Microseismic Imaging and Hydrofracture Numerical Simulations. In *21st Canadian Rock Mechanics Symposium: RockEng12 — Rock Engineering for Natural Resources (Proceedings, CARMA, Edmonton, Canada, May 2012)*, pp. 549–560, C. Hawkes, Ed. Westmount, Quebec: CARMA, CIMICM.

Zhang, F., Huang, H., & Damjanac, B. (2012). DEM/Pore Network Modeling of Fluid Injection Into Granular Media. In *46th US Rock Mechanics / Geomechanics Symposium (Proceedings, ARMA, Chicago, June 2012)*. ARMA 12-621. Alexandria, VA: ARMA.

Gil, I., Nagel, N., Sanchez-Nagel, M., & Damjanac, B. (2011). The Effect of Operational Parameters on Hydraulic Fracture Propagation in Naturally Fractured Reservoirs — Getting Control of the Fracture Optimization Process. In *Proceedings, ARMA 45th U.S. Rock Mechanics / Geomechanics Symposium (San Francisco, June 2011)*, Paper No. 11-391. A. Iannacchione et al., Eds. Alexandria, Virginia: ARMA.

Hazzard, J., Damjanac, B., Detournay, C., & Lorig, L. (2011). Developing Rules of Thumb for Groundwater Modelling in Large Open Pit Mine Design. In *2011 Pan-Am CGS Geotechnical Conference (Proceedings, Geo-Innovation Addressing Global Challenges, Toronto, Ontario, Canada, October 2011)*. Canada: Canadian Geotechnical Society.

Hazzard, J., Damjanac, B., Lorig, L., & Detournay, C. (2011). Guidelines for Groundwater Modelling in Large Open Pit Mine Design. In *Slope Stability 2011 (Proceedings, Int. Symp. on Rock Slope in Open Pit Mining and Civil Engineering, Vancouver, September 2011)*, Paper No. 114. E. Eberhardt and D. Stead, Eds. Vancouver: Canada Rock Mechanics Association.

Nagel, N., Damjanac, B., Garcia, X., & Sanchez-Nagel, M. (2011). Simulating Hydraulic Fracturing in Real Fractured Rock — Overcoming the Limits of Pseudo3D Models. Presented at the Canadian Unconventional Resources Conference (Calgary, Alberta, Canada, November 2011). Canadian Society for Unconventional Gas / Society of Petroleum Engineers, Paper CSUG/SPE 148957-PP.

Nagel, N. B., Gil, I., Sanchez-Nagel, M. A., & Damjanac, B. (2011). Simulating Hydraulic Fracturing in Real Fractured Rock — Overcoming the Limits of Pseudo3D Models. In *Proceedings, SPE Hydraulic Fracturing Technology Conference (The Woodlands, Texas, January 2011)*, SPE Paper No. 140480. Richardson, Texas: SPE.

Nagel, N., Damjanac, B., Garcia, X., & Sanchez-Nagel, M. (2011). Discrete Element Hydraulic Fracture Modeling — Evaluating Changes in Natural Fracture Aperture and Transmissivity. Presented at the Canadian Unconventional Resources Conference (Calgary, Alberta, Canada, November 2011). Society of Petroleum Engineers CSUG/SPE 148957-PP. 2011.

Pettitt, W., Pierce, M., Damjanac, B., Hazzard, J., Lorig, L., Fairhurst, C., Gil, I., Sanchez, M., Nagel, N., Reyes-Montes, J., & Young, R. P. (2011). Fracture Network Engineering for Hydraulic Fracturing. *The Leading Edge*, 30(8), 844-853, doi: 10.1190/1.3626490.

Damjanac, B., & Fairhurst, C. (2010). Evidence for a Long-Term Strength Threshold in Crystalline Rock. *Rock Mech. Rock Eng.*, 43, 513-531, doi: 10.1007/s00603-010-0090-9.

Damjanac, B., Gil, I., Pierce, M., Sanchez, M., Van As, A., & McLennan, J. (2010). A New Approach to Hydraulic Fracturing Modeling in Naturally Fractured Reservoirs. In *Proceedings, 44th U.S. / 5th U.S.-Canada Rock Mechanics Symposium (Salt Lake City, June 2010)*, Paper No. ARMA 10-400. Alexandria, Virginia: ARMA.

Damjanac, B., Radakovic-Guzina, Z., Billaux, D., & Poutrel, A. (2010). Liner Failure around a Tunnel or a Storage Cell in Callovo-Oxfordian Clay. In *Clays in Natural & Engineered Barriers for Radioactive Waste Confinement (Proceedings, 4th International Meeting, March 2010): Abstracts*, pp. 837-838. Nantes: ANDRA.

Gil, I., Damjanac, B., Nagel, N., & Guo, Q. (2010). Geomechanical Evaluation of Solids Injection. In *Proceedings, 44th U.S. / 5th U.S.-Canada Rock Mechanics Symposium (Salt Lake City, June 2010)*, Paper No. ARMA 10-399. Alexandria, Virginia: ARMA.

Lorig, L., Cundall, P. A., Damjanac, B., & Emam, S. (2010). A Three-Dimensional Model for Rock Slopes Based on Micromechanics. In *Proceedings, 44th U.S. Rock Mechanics Symposium / 5th U.S.-Canada Rock Mechanics Symposium (Salt Lake City, June 2010)*, Paper No. 10-163. Alexandria, Virginia: ARMA.

McLennan, J., Zhao, N., Thakur, S., Deo, M., Gil, I., & Damjanac, B. (2010). Modeling Fluid Invasion and Hydraulic Fracture Propagation in a Naturally Fractured Rock, a Three Dimensional Approach. In *Proceedings, 2010 SPE International Symposium and Exhibition on Formation Damage Control (Lafayette, Louisiana, February 2010)*, SPE Paper No. 127888. Richardson, Texas.

Pettitt, W., Pierce, M., Damjanac, B., Lorig, L., & Fairhurst, C. (2010). Fracture Network Engineering and Enhanced Geothermal Systems. *Geoth. Res. T.*, 34, 419-426.

Cundall, P. A., & Damjanac, B. (2009). A Comprehensive 3D Model for Rock Slopes Based on Micromechanics. In *Slope Stability 2009 (Proceedings, Universidad de Los Andes, Santiago, November 2009)*.

Board, M., Damjanac, B., & Pierce, M. (2007). Development of a Methodology for Analysis of Instability in Room and Pillar Mines. In *Deep Mining 07 (Proceedings, Fourth International Seminar on Deep and High Stress Mining, Perth, Australia, November 2007)*, pp. 273-282. Y. Potvin, Ed. Perth: Australian Centre for Geomechanics.

Damjanac, B., Board, M., Lin, M., Kicker, D., & Leem, J. (2007). Mechanical Degradation of Emplacement Drifts at Yucca Mountain — A Modeling Case Study, Part II: Lithophysal Rock. *Int. J. Rock Mech. Min. Sci.*, 44, 368-399.

Fairhurst, C., Damjanac, B., & Brandshaug, T. (2007). Rock Mass Strength and Numerical 'Experiments'. In *Publications of the Geotechnical Institute No. 2006-5 (Proceedings, 35 Geomechanics Colloquium, November 2006)*, pp. 1-20. Freiberg, Germany: Technical University Mining Academy Freiberg.

Gaffney, E. S., Damjanac, B., & Valentine, G. A. (2007). Localization of Volcanic Activity: 2. Effects of Pre-Existing Structure. *EPSL*, 263, 323–338.

Lin, M., Kicker, D., Damjanac, B., Board, M., & Karakouzian, M. (2007). Mechanical Degradation of Emplacement Drifts at Yucca Mountain — A Modeling Case Study, Part I: Nonlithophysal Rock. *Int. J. Rock Mech. Min. Sci.*, 44, 351–367.

Damjanac, B., Cundall, P. A., & Brandshaug, T. (2006). Itasca Presentations at the Menlo Park Workshop, August 23-24, 2004. In *Report of the Workshop on Extreme Ground Motions at Yucca Mountain, August 23-25, 2004*, U.S. Geological Survey, USGS Open-File Report 2006-1277. T. C. Hanks et al., Eds. Reston, Virginia: USGS.

Gaffney, E., & Damjanac, B. (2006). Localization of Volcanic Activity: Topographic Effects on Dike Propagation, Eruption and Conduit Formation. *Geophys. Res. Lett.*, 41T41T 33, L14313, doi: 10.1029/2006GL026852.

Leem, J., Lin, M., Sun, Y., Kicker, D. C., & Damjanac, B. (2005). Thermal-Hydrologic-Mechanical Study of Pre-Closure Off-Normal Thermal Scenarios at the Proposed Yucca Mountain Nuclear Waste Repository. In *Alaska Rocks 2005 — Rock Mechanics for Energy, Mineral and Infrastructure Development in the Northern Regions (Proceedings, University of Alaska-Anchorage, June 2005)*, Paper No. ARMA/USRMS 05-837. G. Chen et al., Eds. University of Alaska-Fairbanks: ARMA.

Lin, M., Board, M. P., Kicker, D. C., Leem, J., Damjanac, B., & Buesch, D. C. (2005). Assessment of Drift Stability with Consideration of Spatial Variation of Lithophysal Cavities at Yucca Mountain. In *Alaska Rocks 2005 — Rock Mechanics for Energy, Mineral and Infrastructure Development in the Northern Regions (Proceedings, University of Alaska-Anchorage, June 2005)*, Paper No. ARMA/USRMS 05-802. G. Chen et al., Eds. University of Alaska-Fairbanks: ARMA.

Board, M., & Damjanac, B. (2003). Development of a Methodology for Analysis of Instability in Room and Pillar Mines. In *2003 Swedish Rock Mechanics Day Conference*, pp. 1–22, O. Stephansson, Ed. Stockholm: SveBeFo.

Damjanac, B., & Detournay, E. (2002). Effects of Underground Nuclear Tests in French Polynesia on the Stability of Atoll Flanks. In *Proceedings, 9th International Congress on Rock Mechanics (Paris, September 1999)*, Vol. 3, pp. 1767–1774. G. Vouille and P. Bérest, Eds. Rotterdam: Balkema.

Damjanac, B., Siegel, T., & Hart, R. (2002). Seismic Analysis of a Pile-Supported Wharf in Charleston, South Carolina. Presented at Down to Earth Technology (International Deep Foundations Congress, Orlando, February 2002).

Damjanac, B., & Fairhurst, C. (2000). Ecoulement tri-dimensionnel d'eau sous pression dans les milieux fractures. In *La Sécurité des grands ouvrages, Hommage à Pierre Londe*, pp. 5–19. Paris: Presses Pontes et Chaussées.

Fairhurst, C., Damjanac, B., & Hart, R. (2000). Numerical Analysis as a Practical Design Tool in Geo Engineering. In *Slope Stability 2000*, Geotechnical Special Publication No. 101 (*Proceedings, Sessions of Geo-Denver 2000 (Denver, August 2000)*), pp. 169–183. D. V. Griffiths, Ed. Reston, Virginia: ASCE.

Fairhurst, C., & Damjanac, B. (1999). The Excavation Damage Zone — An International Perspective. In *Proceedings, Excavation Disturbed Zone Workshop: Designing the Excavation Disturbed Zone for a Nuclear Repository in Hard Rock (Winnipeg, September 1996)*, pp. 4–14. J. B. Martino and C. D. Martin, Compilers. Toronto: Canadian Nuclear Society, 1996; in *Distinct Element Modeling in Geomechanics*, pp. 1–26. V. M. Sharma et al., Eds. New Delhi: Oxford & IBH Publishing.

Damjanac, B., Detournay, E., & Huang, H. (1999). Effects of Underground Nuclear Tests in French Polynesia on the Stability of Atoll Flanks. In *FLAC and Numerical Modeling in Geomechanics (Proceedings, Minneapolis, September 1999)*, pp. 23–31. C. Detournay and R. Hart, Eds. Rotterdam: Balkema.

Damjanac, B., Fairhurst, C., & Brandshaug, T. (1999). Numerical Simulation of the Effects of Heating on the Permeability of a Jointed Rock Mass with Particular Reference to the Yucca Mountain Nuclear Waste Repository. In *Proceedings, 9th International Congress on Rock Mechanics (Paris, September 1999)*, Vol. 2, pp. 881–885. G. Vouille and P. Bérest, Eds. Rotterdam: Balkema.

Huang, H., Damjanac, B., & Detournay, E. (1998). Normal Wedge Indentation in Rocks with Lateral Confinement. *Rock Mech. & Rock Eng.*, 31(2), 81–94.

Huang, H., Damjanac, B., & Detournay, E. (1997). Numerical Modeling of Normal Wedge Indentation in Rocks with Lateral Confinement. *Int. J. Rock Mech. & Min. Sci.*, 34(3-4), p. 613, Paper No. 64.

Damjanac, B. (1996). *A Three-Dimensional Numerical Model of Water Flow in a Fractured Rock Mass*. Ph.D. Thesis, University of Minnesota, February 1996.

Damjanac, B., & Detournay, E. (1995). Numerical Modeling of Normal Wedge Indentation in Rocks. In *Rock Mechanics (Proceedings, 35th U.S. Symposium, University of Nevada, Reno, June 1995)*, pp. 349–354. J.J.K. Daemen and R. A. Schultz, Eds. Rotterdam: Balkema.

Damjanac, B., & Fairhurst, C. (1994). A Note on Modeling of the Groundwater Flow and Pressure Behavior Observed During Excavation of the SCV Drift in the Stripa Project. In *Proceedings, Fourth NEA / SKB Symposium (Stockholm, October 1992)*, pp. 437–446. Paris: OECD.

Smiljkovic, Z., & Damjanac, B. (1989). Some Design Aspects of Large Rock Caverns for Storing Petroleum Products. In *Proceedings, International Congress on Progress and Innovation in Tunnelling (Toronto, 1989)*, pp. 419–426. K. Y. Lo et al., Eds. Toronto: Tunnelling Association of Canada/National Research Council of Canada/International Tunnelling Association.