

Hu, W. R., K. Liu, D. O. Potyondy and Q. B. Zhang. “3D Continuum-Discrete Coupled Modelling of Triaxial Hopkinson Bar Tests on Rock under Multiaxial Static-Dynamic Loads,” *Int. J. Rock Mech. & Min. Sci.*, **134**, 104448. <https://doi.org/10.1016/j.ijrmms.2020.104448>. 2020.

Lorig, L., D. Potyondy and Varun. “Quantifying Excavation-Induced Rock Mass Damage in Large Open Pits,” in *Proceedings, 2020 International Symposium on Slope Stability in Open Pit Mining and Civil Engineering (Virtual Conference, May 2020)*, 969–982. Perth: Australian Centre for Geomechanics. 2020.

Dahal, B., D. Mishra and D. Potyondy. “Application of PFC3D to Study Railroad Ballast Breakage Response under Train Loading,” in *Applied Numerical Modeling in Geomechanics 2020 (Proceedings, 5th International Itasca Symposium, February 2020)*, Paper 03-04. Minneapolis, Minnesota: Itasca, 2020.

Hu, W., D. Potyondy and Q. Zhang. “FLAC3D-PFC3D Coupled Simulation of Triaxial Hopkinson Bar,” in *Applied Numerical Modeling in Geomechanics 2020 (Proceedings, 5th International Itasca Symposium, February 2020)*, Paper 05-01. Minneapolis, Minnesota: Itasca, 2020.

Potyondy, D. O., and D. Mas Ivars. “Simulating Spalling with a Flat-Jointed Material,” in *Applied Numerical Modeling in Geomechanics 2020 (Proceedings, 5th International Itasca Symposium, February 2020)*, Paper 03-01. Minneapolis, Minnesota: Itasca, 2020.

Potyondy, D., L. Lorig and M. Purvance. “The Effect of Rock Mass Damage on Strength Degradation in Large Open Pits,” in *Proceedings, ISRM 14th International Congress of Rock Mechanics (Iguassu Falls, Brazil, September 2019)*, pp. 2450–2460. ISRM, 2019.

Potyondy, D. O. “A Flat-Jointed Bonded-Particle Model for Rock,” in *Proceedings, 52nd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, Seattle, Washington, June 2018)*, ARMA 18-1208. Alexandria, Virginia: ARMA, 2018.

Mahmud, S. M. N., D. Mishra and D. O. Potyondy. “Effect of Geogrid Inclusion on Ballast Resilient Modulus: The Concept of ‘Geogrid Gain Factor,’” in *Proceedings, 2018 Joint Rail Conference (Pittsburgh, PA, April 2018)*, JRC2018-6126. ASME, 2018.

Potyondy, D. O. “Simulating Perforation Damage with a Flat-Jointed Bonded-Particle Material,” in *Proceedings, 51st U.S. Rock Mechanics/Geomechanics Symposium (San Francisco, California, June 2017)*, ARMA 17-223. Alexandria, Virginia: ARMA, 2017.

Siekmeier, J., J. Bittmann, D. Potyondy and L. Petersen. “Introducing a Geogrid Gain Factor for Flexible Pavement Design,” in *Proceedings, University of Minnesota 64th Annual Geotechnical Engineering Conference (Minneapolis, March 2016)*, J. F. Labuz and A. B. Carney, Eds. Minneapolis: University of Minnesota. 2016.

Potyondy, D., J. Siekmeier and L. Petersen. “Aggregate-Geogrid Interaction Model Incorporating Moisture Effects,” in *Proceedings, Transportation Research Board 2016 Annual Meeting (Washington, D.C., January 2016)*, 16–6085. Washington, D.C.: National Academy of Sciences. 2016.

Potyondy, D. “The Bonded-Particle Model as a Tool for Rock Mechanics Research and Application: Current Trends and Future Directions,” *Geosystem Engineering*, **18**(1), 1–28. doi: 10.1080/12269328.2014.998346. 2015.

Ostanin, I., R. Ballarini, D. Potyondy and T. Dumitrica. “A Distinct Element Method for Large Scale Simulations of Carbon Nanotube Assemblies,” *Journal of the Mechanics and Physics of Solids*, **61**, 762–782. 2013.

Bahrani, N., D. Potyondy and M. Pierce. “Simulation of Brazilian Test Using PFC2D Grain-Based Model,” in *21st Canadian Rock Mechanics Symposium: RockEng12 — Rock Engineering for Natural Resources (Proceedings, CARMA, Edmonton, Canada, May 2012)*, pp. 485-493, C. Hawkes, Ed. Westmount, Quebec: CARMA, CIMICM. 2012.

Katsaga, T., and D. O. Potyondy. “A Generic Stope Model for Investigation of Fracturing Mechanisms in Deep Gold Mines,” in *46th US Rock Mechanics / Geomechanics Symposium (Proceedings, ARMA, Chicago, June 2012)*. ARMA 12-541. Alexandria, Virginia: ARMA. 2012.

Potyondy, D. O. “A Flat-Jointed Bonded-Particle Material for Hard Rock,” in *46th U.S. Rock Mechanics / Geomechanics Symposium (Proceedings, ARMA, Chicago, June 2012)*. Paper No. 12-501. Alexandria, Virginia: ARMA. 2012.

Potyondy, D. O. “The Bonded-Particle Model as a Tool for Rock Mechanics Research and Application: Current Trends and Future Directions,” in *The Present and Future of Rock Engineering (Proceedings, ARMS7 — The 7th Asian Rock Mechanics Symposium / 2012 ISRM Regional Symposium, Seoul, Korea, October 2012)*, pp. 73-105. Seoul: The Korean Science and Technology Center. 2012.

Mas Ivars, D., M. E. Pierce, C. Darcel, J. Reyes-Montes, D. O. Potyondy, R. P. Young and P. A. Cundall. “The Synthetic Rock Mass Approach for Jointed Rock Mass Modelling,” *Int. J. Rock Mech. Min. Sci.*, **48**, 219-244 (2011).

Potyondy, D. O. “Parallel-Bond Refinements to Match Macroproperties of Hard Rock,” in *Continuum and Distinct Element Modeling in Geomechanics — 2011 (Proceedings, 2nd International FLAC / DEM Symposium (Melbourne, February 2011)*, Paper No. 08-04, pp. 459-465. D. Sainsbury et al., Eds. Minneapolis: Itasca International Inc., 2011.

Purvance, M. D., D. Russell, D. Potyondy and S. Emam. “Spatial Searching and Contact Detection in PFC 5.0,” in *Continuum and Distinct Element Modeling in Geomechanics — 2011 (Proceedings, 2nd International FLAC / DEM Symposium (Melbourne, February 2011)*, Paper No. 14-01, pp. 783-790. D. Sainsbury et al., Eds. Minneapolis: Itasca International Inc., 2011.

Anderson, T., E. Akatyeva, I. Nikiforov, D. Potyondy, R. Ballarini and T. Dumitrică. “Toward Distinct Element Method Simulations of Carbon Nanotube Systems,” *J. Nanotechnol. Eng. Med.*, **1**, 041009-2, doi: 10.1115/1.4002609 (2010).

Potyondy, D. “A Grain-Based Model for Rock: Approaching the True Microstructure,” in *Proceedings, Bergmekanikk i Norden 2010 — Rock Mechanics in the Nordic Countries 2010 (Kongsberg, Norway, June 2010)*, pp. 225-234. C. C. Li et al., Eds. Oslo: Norwegian Group for Rock Mechanics, 2010.

Mas Ivars, D., D. O. Potyondy, M. Pierce and P. A. Cundall. “The Smooth-Joint Contact Model (Abstract),” in *Proceedings, WCCM8 — ECCOMAS 2008 (8th World Congress on Computational Mechanics / 5th European Congress on Computational Methods in Applied Sciences & Engineering, Venice, June-July 2008)*, Paper No. a2735. B. A. Schrefler and U. Perego, Eds. Barcelona: International Center for Numerical Methods in Engineering (CIMME), 2008.

Potyondy, D., and J. Hazzard. “Effects of Stress and Induced Cracking on the Static and Dynamic Moduli of Rock,” in *Continuum and Distinct Element Numerical Modeling in Geo-Engineering (Proceedings, 1st International FLAC/DEM Symposium, Minneapolis, August 2008)*, Paper No. 04-03. R. Hart et al., Eds. Minneapolis: Itasca Consulting Group, Inc., 2008.

Mas Ivars, D., M. Pierce, D. O. Potyondy and P. A. Cundall. “A New Modelling Approach for the Study of Deformation, Yield and Failure of Jointed Rock Masses,” in *Bergmekanikdag 2007 (Swedish Rock Mechanics Day 2007)*, pp. 33-41. Stockholm: SveBeFo, 2007.

Pierce, M., P. Cundall, D. Potyondy and D. Mas Ivars. “A Synthetic Rock Mass Model for Jointed Rock,” in *Rock Mechanics: Meeting Society's Challenges and Demands (1st Canada-U.S. Rock Mechanics Symposium, Vancouver, May 2007)*, Vol. 1: *Fundamentals, New Technologies & New Ideas*, pp. 341-349. E. Eberhardt et al., Ed. London: Taylor & Francis Group, 2007.

Potyondy, D. O. “The Effect of Voids on the Mechanical Properties of Rock,” in *DEM 07 (CD Proceedings, Discrete Element Modelling Conference, Brisbane, August 27-29, 2007)*. Minerals Engineering International, 2007.

Potyondy, D. O. “Simulating Stress Corrosion with a Bonded-Particle Model for Rock,” *Int. J. Rock Mech. Min. Sci.*, **44**, 677-691 (2007).

Potyondy, D. “Formulation of a Bonded-Particle Model to Simulate Stress Corrosion in Rock,” in *Abstract Book (11th International Conference on Fracture (ICF11), Turin, Italy, March 2005)*, p. 252; in *CD Abstracts (11th International Conference on Fracture (ICF11), Turin, Italy, March 2005)*, Extended Abstract No. 3469, 2005.

Potyondy, D. O., and P. A. Cundall. “A Bonded-Particle Model for Rock,” *Int. J. Rock Mech. & Min. Sci.*, **41**(8), 1329-1364 (2004).

Young, R. P., D. S. Collins, J. Hazzard, A. Heath, W. S. Pettitt, C. Baker, D. Billaux, P. Cundall, D. Potyondy, F. Dedecker, C. Svemar and P. Lebon, “An Innovative 3-D Numerical Modelling Procedure for Simulating Repository-Scale Excavations in Rock — SAFETI,” presented at the Euradwaste'04 Conference on Radioactive Waste Management Community Policy and Research Initiatives (Luxembourg, March 2004), Poster P37; in *Programme and Abstracts from the Sixth European Commission Conference on the Management and Disposal of Radioactive Waste (EURADWASTE '04), Luxembourg, March-April 2004*, Poster P37.

Young, R. P., D. S. Collins, J. Hazzard, A. Heath, C. Baker, W. S. Pettitt, D. Billaux, P. Cundall, D. Potyondy, F. Dedecker, and C. Svemar. “An Innovative 3-D Numerical Modelling Procedure for Simulating Repository-Scale Excavations in Rock — SAFETI,” in *The Performance of Radioactive Waste Geological Repositories (Proceedings, CLUSTER Conference on Impact of the EDZ, Luxembourg, 2003)*.

Autio, J., T. Wanne and D. Potyondy. “Particle Mechanical Simulation of the Effect of Schistosity on Strength and Deformation of Hard Rock,” in *NARMS-TAC 2002: Mining and Tunnelling Innovation and Opportunity*, Vol. 1, pp. 275-282. R. Hammah et al., Eds. Toronto: University of Toronto Press, 2002.

Chandler, N., R. Read, D. Potyondy, R. P. Young and J. Hazzard. “Computing Brittle Rock Fracture and Excavation Stability Using the Particle Flow Code,” in *CD Proceedings, 2nd Canadian Specialty Conference on Computer Applications in Geotechnique (Winnipeg, April 2002)*, pp. 104-111. Alliston, Ontario, Canada: Canadian Geotechnical Society, 2002.

Pierce, M. E., D. Potyondy, P. Andrieux and J.-S. Lessard. "Use of the Particle Flow Code (PFC2D) to Assess Stability of Undercut Rockfill at Brunswick Mine," in *NARMS-TAC 2002: Mining and Tunnelling Innovation and Opportunity*, Vol. 1, pp. 173-180. R. Hammah et al., Eds. Toronto: University of Toronto Press, 2002.

Potyondy, D. "A Bonded-Disk Model for Rock: Relating Microproperties and Macroproperties," in *Discrete Element Methods: Numerical Modeling of Discontinua (Proceedings, Third International Conference, Santa Fe, September 2002)*, pp. 340-345. B. K. Cook and R. P. Jensen, Eds. Reston, Virginia: ASCE, 2002.

Potyondy, D., and J. Autio. "Bonded-Particle Simulations of the In-Situ Failure Test at Olkiluoto," in *Rock Mechanics in the National Interest (Proceedings, 38th U.S. Rock Mechanics Symposium, Washington, D.C., July 2001)*, Vol. 2, pp. 1553-1560. Lisse: Balkema, 2001.

Chandler, N., R. Read, P. Cundall, D. Potyondy, E. Detournay, R. P. Young and J.S.O. Lau. "An Integrated Approach to Excavation Design — A Project Within Canada's Used Fuel Disposal Program," in *Pacific Rocks 2000: Rock Around the Rim (Proceedings, 4th North American Rock Mechanics Symposium, Seattle, July-August 2000)*, pp. 1271-1278. J. Girard et al., Eds. Rotterdam: Balkema 2000.

Potyondy, D. O., and C. E. Fairhurst. "The Value of Numerical Modeling in Understanding the Complete Load / Deformation Behavior of Cohesive-Frictional Materials," in *Nondestructive and Automated Testing for Soil and Rock Properties, ASTM STP 1350*, pp. 290-299. W. A. Marr and C. E. Fairhurst, Eds. West Conshohocken, Pennsylvania: ASTM, 1999.

Potyondy, D. O., and Peter A. Cundall. "Modeling Notch-Formation Mechanisms in the URL Mine-by Test Tunnel Using Bonded Assemblies of Circular Particles," *Int. J. Rock Mech. & Min. Sci.*, **35**(4-5); Special Issue (Proceedings, NARMS '98, 3rd North American Rock Mechanics Symposium, Cancun, Mexico, June/July 1998), Paper No. 067 (1998).

Cundall, P. A., H. Konietzky and D. O. Potyondy. "PFC — Ein Neues Werkzeug für Numerische Modellierungen," *Bautechnik*, **73**(8), 492-498 (1996).

Cundall, P. A., D. O. Potyondy and C. A. Lee. "Micromechanics-Based Models for Fracture and Breakout Around the Mine-by Tunnel," in *Designing the Excavation Disturbed Zone for a Nuclear Repository in Hard Rock (Proceedings, Excavation Disturbed Zone Workshop, 1996 Canadian Nuclear Society International Conference on Deep Geological Disposal of Radioactive Waste, Winnipeg, Manitoba, September 1996)*, pp. 113-122. J. B. Martino and C. D. Martin, Eds. Toronto: Canadian Nuclear Society, 1996.

Cundall, P. A., L. J. Lorig and D. O. Potyondy. "Distinct-Element Models of Explosion-Induced Failure of Rock, Including Fragmentation and Gas Interaction," in *Explosion Effects in Granular Materials*, pp. 369-394. J. Jenssen et al., Eds. Oslo: Norwegian Defense Construction Service, 1996.

Potyondy, D. O., P. A. Cundall and R. S. Sarracino. "Modeling of Shock-and Gas-Driven Fractures Induced by a Blast Using Bonded Assemblies of Spherical Particles," *Rock Fragmentation by Blasting (Proceedings, Fifth International Symposium on Rock Fragmentation by Blasting B FRAGBLAST 5, Montréal, Québec, August 1996)*, pp. 55-62. B. Mohanty, Ed. Rotterdam: Balkema, 1996.

Potyondy, D. O., P. A. Cundall and C. Lee. "Modeling Rock Using Bonded Assemblies of Circular Particles," in *Rock Mechanics Tools and Techniques (Proceedings, Second North American Rock Mechanics Symposium, Montréal, June 1996)*, pp.1937 - 1944. M. Aubertin, et al., Eds. Rotterdam: Balkema, 1996.

Lorig, L., M. P. Board, D. O. Potyondy and M. J. Coetzee. "Numerical Modeling of Caving Using Micro-Mechanical Models," in *CAMI '95 (Proceedings, Third Canadian Conference on Computer Applications in the Mineral Industry, October 1995)*, pp. 416-425. H. S. Mitri, Ed. Montréal: McGill University Press, 1995.

Potyondy, D. O., P. A. Wawrzynek and A. R. Ingraffea. "An Algorithm to Generate Quadrilateral or Triangular Element Surface Meshes in Arbitrary Domains with Applications to Crack Propagation," *Int. J. Num. Methods Eng.*, **38**(16), 2677-2701 (1995).

Viz, M. J., D. O. Potyondy, A. T. Zehnder, C. C. Rankin and E. Riks. "Computation of Membrane and Bending Stress Intensity Factors for Thin, Cracked Plates," *Int. J. Frac.*, **72**, 21-38 (1995).

Gray, L. J., D. O. Potyondy, E. D. Lutz, P. A. Wawrzynek, L. F. Martha and A. R. Ingraffea. "Crack Propagation Modeling," *Math. Models & Methods App. Sci.*, **4**(2), 179-202 (1994).

Potyondy, D. O., P. A. Wawrzynek and A. R. Ingraffea. "Discrete Crack Growth Analysis Methodology for Through Cracks in Pressurized Fuselage Structures," *IJNME*, **38**(10), 1611-1633 (1995); also in shortened form in *Proceedings, FAA / NASA Advanced Structural Integrity Methods for Airframe Durability and Damage Tolerance (Hampton, Virginia, May 1994)*, NASA Conference Publication 3274, Part 2, pp. 581-602. Hampton, Virginia: NASA Langley Research Center, 1994.

Shenoy, V. B., D. O. Potyondy and S. N. Atluri. "A Methodology for Computing Nonlinear Fracture Parameters for a Bulging Crack in a Pressurized Aircraft Fuselage," *Comp. Mech.*, **14**, 529-548 (1994).

Wawrzynek, P. A., B. J. Carter, A. R. Ingraffea and D. O. Potyondy. "A Topological Approach to Modeling Arbitrary Crack Propagation in 3D," in *DIANA Computational Mechanics '94*, pp. 69-84. The Netherlands: G.M.A. Kusters and M.A.N. Hendriks, Eds. Kluwer Academic, 1994.

Potyondy, D. O. *A Software Framework for Simulating Curvilinear Crack Growth in Pressurized Thin Shells*, Ph.D. Thesis, Cornell University, August 1993.

Potyondy, D. O., and A. R. Ingraffea. "A Methodology for Simulation of Curvilinear Crack Growth in Pressurized Fuselage," in *Durability of Metal Aircraft Structures (Proceedings, International Workshop on Structural Integrity of Aging Airplanes)*, pp. 217-230. S. N. Atluri et al., Eds. Atlanta: Atlanta Technology Publications, 1992.

Potyondy, D. O., L. J. Gray and A. R. Ingraffea. "Simulation of 3-D Non-Planar Fatigue Crack Growth in a Turbine Blade Root," in *Computer Technology: Advances and Applications (Proceedings, ASME Pressure Vessels and Piping Conference)*, pp. 31-42. R. S. Gallagher and G. M. Hulbert, Eds. New York: ASME, 1992.

Andrews, J. R., J. E. Stinehour, M. H. Lean, D. O. Potyondy, P. A. Wawrzynek, A. R. Ingraffea and M. D. Rainsdon. "Holographic Display of Computer Simulations," in *Practical Holography V*, SPIE Vol. 1461, pp. 110-123. S. A. Benton, Ed. Bellingham, Washington: SPIE-ISOE, 1991.

Potyondy, D. O. *Toward the Simulation of Three Dimensional Reinforced Concrete Subassemblages*, M.S. Thesis, Cornell University, May 1990.

Potyondy, D. O., J. F. Abel and A. R. Ingraffea. "An Interactive Environment for the Simulation of 3-D Reinforced Concrete Subassemblages," in *Computer Aided Analysis and Design of Concrete Structures*, Vol. 1, pp. 503-514. N. Bicanic and H. Mang, Eds. Swansea, U.K.: Pineridge Press, 1990.

Potyondy, D. O. “Solving Real Engineering Problems,” *CURA Reporter* (Center for Urban and Regional Affairs, University of Minnesota), *XIV*(1), 9-11 (January 1984).

Invited Lectures

Invited lectures on PFC Modeling, Tongji University (Shanghai, China, 21 May 2019). Host: Fengshou Zhang “Frank”. Three talks: (1) “The Bonded-Particle Model as a Tool for Rock Mechanics Research and Application,” Departmental Lecture (21 May 2019); (2) “Simulating Perforation Damage with a 2D Flat-Jointed Bonded-Particle Material,” Departmental Lecture (21 May 2019); (3) “Simulating Spalling with a 3D Flat-Jointed Bonded-Particle Material,” Departmental Lecture (21 May 2019). Keynote lecture for PFC Workshop put on by HydroChina – Itasca R&D Center (Hangzhou, China). Host: Weijiang Chu “River”. “PFC (Particle Flow Code): Historical Development and Engineering Applications,” Keynote Lecture (23 May 2019).

Invited lectures, University of Tennessee (Knoxville), Civil Engr. Dept. (Knoxville, TN, 22–23 March 2018). Host: Khalid Alshibli. Three talks: (1) “PFC Pavement-Design Package,” Tennessee Department of Transportation, Materials and Tests Division (Knoxville, TN, March 22, 2018); (2) “PFC (Particle Flow Code): Historical Development and Engineering Applications,” Departmental Seminar, University of Tennessee (Knoxville), CE Department (Knoxville, TN, March 22, 2018); (3) “Discrete-Element Modeling of Rock Fracture for Nuclear-Waste Isolation: Predicting the Effect of Lithophysae on the Properties of Volcanic Tuff,” ASCE Technical Seminar, Knoxville ASCE Branch (Oak Ridge, TN, March 23, 2018).

Invited lectures on Bonded-Particle Modeling, Tsinghua University, Civil Engr. Dept. (Beijing, China, 12-16 October 2015). Host: Zhihong Zhao. Four talks: (1) “The Bonded-Particle Model as a Tool for Rock Mechanics Research and Application,” Graduate Lecture (13 October 2015); (2) “PFC (Particle Flow Code): Historical Development and Engineering Applications,” General Seminar (14 October 2015); (3) “Simulating Perforation Damage with a Flat-Jointed Bonded-Particle Material,” General Seminar (14 October 2015); (4) “Discrete-Element Modeling of Rock Fracture: Predicting the Effect of Lithophysae on the Properties of Volcanic Tuff,” Workshop on DEM in Geotechnical Engineering (16 October 2015).

“The Bonded-Particle Model as a Tool for Rock Mechanics Research and Application: Current Trends and Future Directions,” Keynote Lecture at 7th Asian Rock Mechanics Symposium — ARMS7 (Seoul, Korea, 16 October, 2012).

“Bonded-Particle Modeling of Excavation Response,” Lecture for Online Certificate in Tunneling Course, University of Texas at Austin, July 2010.

“Discrete Element Modeling of Rock Fracture for Nuclear-Waste Isolation: Predicting the Effect of Lithophysae on the Properties of Volcanic Tuff,” State of the Art Lecture, 13th Annual George F. Sowers Symposium, Georgia Institute of Technology, Atlanta, May 11, 2010.