

PUBLICATIONS

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. In *Proceedings, 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. In *Proceedings, 49th Workshop on Geothermal Reservoir Engineering (Stanford University, Stanford, California, February 2024)*, SGP-TR-227.

Luo, B., Wong, G. K., Guo, J., Fu, W., Lu, G., & Bunger, A. P. (2023). Modeling of solids particle diversion to promote uniform growth of multiple hydraulic fractures. *Journal of Petroleum Science and Engineering*, Volume 220, Part A.

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.

Fu, W., Furtney, J., & Valencia, J. (2023). Blast Movement Simulation through a Hybrid Approach of Continuum, Discontinuum, and Machine Learning Modeling. In *Proceedings, 57th U.S. Rock Mechanics/Geomechanics Symposium (ARMA, Atlanta, Georgia, June 2023)*, ARMA 23-831.

Luo, B., Wong, G. K., Guo, J., Fu, W., Lu, G., & Bunger, A. P. (2023). Modeling of solids particle diversion to promote uniform growth of multiple hydraulic fractures. *Journal of Petroleum Science and Engineering*, 220, 111159. <https://doi.org/10.1016/j.petrol.2022.111159>.

Fu, W., Morris, J. P., Sherman, C. S., Fu, P., & Huang, J. (2022). Controlling hydraulic fracture growth through precise vertical placement of lateral wells: insights from HFTS experiment and numerical validation. *Rock Mechanics and Rock Engineering* 55(9), 5453-5466. <https://doi.org/10.1007/s00603-022-02906-8>.

Joseph, M., Fu, P., Sherman, C., Wu, H., Huang, J., & Fu, W. (2022). An Investigation of Candidate Mechanisms for Hydraulic Fracture Swarming through High-Fidelity Numerical Modeling. In *Proceedings, SPE Hydraulic Fracturing Technology Conference and Exhibition (The Woodlands, Texas, February 2022)*, SPE-209126-MS. SPE. <https://doi.org/10.2118/209126-MS>.

Hu, X., Fu, W., Wu, S., Fang, Y., & Wang, J. (2021). Numerical Study on the Tunnel Stability in Granular Soil using DEM Virtual Air Bag Model. *Acta Geotech.* 16, 3285–3300. <https://doi.org/10.1007/s11440-020-01130-4>.

Hu, X., Wang, J., Fu, W., Woody Ju, J., He, C., & Fang, Y. (2021). Laboratory Test of EPB Shield Tunneling in Mixed-Face Conditions. *International Journal of Geomechanics*, 21(9), 04021161.

Furtney, J. K., Thielsen, C., Fu, W., & Le Goc, R. (2021). Surrogate Models in Rock and Soil Mechanics: Integrating Numerical Modeling and Machine Learning. *Rock Mechanics and Rock Engineering*. <https://doi.org/10.1007/s00603-021-02720-8>.

Fu, W., Morris, J. P., Fu, P., Huang, J., Sherman, C. S., Settgast, R. R., & Ryerson, F. J. (2021). An Upscaling Approach to Model Swarming Hydraulic Fractures Observed at the Hydraulic Fracturing Test Site in Field-Scale Simulations. *SPE Journal*, 1–15. <https://doi.org/10.2118/199689-PA>.

Birkholzer, J. T., Morris, J. P., Bargar, J., Cihan, A., Crandall, D., Deng, H., Fan, W., Fu, W., Fu, P., Hakala, A., Hao, Y., Huang, J., Jew, A., Lopano, C., Kneafsey, T., Moore, J., Moridis, G., Nakagawa, S., Noël, V., Reagan, M., Sherman, C. S., Settgast, R. R., Steefel, C., Voltolini, M., & Xiong, W. (2021). A New Modeling Framework for Multi-Scale Simulation of Hydraulic Fracturing and Production from Unconventional Reservoirs. *Energies*, 14(3), 641. <https://doi.org/10.3390/en14030641>.

Hu, X., Fu, W., Ju, W., He, C., Fang, Y., & Wang, J. (2020). Face Stability Conditions in Granular Soils during the Advancing and Stopping of Earth-Pressure-Balanced-Shield Machine. *Tunneling and Underground Space Technology*, 109, 103755. <https://doi.org/10.1016/j.tust.2020.103755>.

Hu, X., He, C., Lai, X., Walton, G., Fu, W., & Fang, Y. (2020). A DEM-Based Study of the Disturbance in Dry Sandy Ground Caused by EPB Shield Tunneling. *Tunneling and Underground Space Technology*, 101, p.103410. <https://doi.org/10.1016/j.tust.2020.103410>.

Fu, W., Morris, J. P., Fu, P., Huang, J., Sherman, C. S., & Settgast, R. R. (2020). Simulating Tightly-Spaced Swarming Hydraulic Fractures at Field Scale Using an Upscaling Approach. In *GOLDEN 2020 (Proceedings, 54th U.S. Rock Mechanics/Geomechanics Symposium, Golden, Colorado, June 2020)*, ARMA 20-1044. Alexandria, Virginia: ARMA.

Fu, W., Morris, J. P., Fu, P., Huang, J., Sherman, C. S., Settgast, R. R., Wu, H., and Ryerson, F. J. (2020). Developing Upscaling Approach for Swarming Hydraulic Fractures Observed at Hydraulic Fracturing Test Site Through Multiscale Simulations. In *Proceedings, SPE Hydraulic Fracturing Technology Conference and Exhibition (The Woodlands, Texas)*. SPE-199689-MS. Society of Petroleum Engineers. <https://doi.org/10.2118/199689-MS>.

Yang, J., Fu, W., Hu, X., Liu, C., Yang, Q., & Ju, J. W. (2020). Experimental Study on the Long-Term Behaviors of Spray-Applied Acrylate Waterproofing Membrane for Tunnels Exposed to Aggressive Ions. *Construction and Building Materials*, 258, 119603. <https://doi.org/10.1016/j.conbuildmat.2020.119603>.

Fu, W., & Bunger, A. P. (2019). 3D DEM Simulation on the Interference of Multiple Hydraulic Fractures in Horizontal Wells. In *Proceedings, 53rd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, New York City, June 2019)*, ARMA-2019-0045. Alexandria, Virginia: ARMA.

Morris, J. P., Sherman, C. S., Fu, P., Settgast, R. R., Huang, J., Fu, W., Wu, H., Hao, Y., & Ryerson, F. J. (2019). Multiscale Geomechanical Analysis of the Hydraulic Fracturing Test Site. In *Proceedings, 53rd U.S. Rock Mechanics/Geomechanics Symposium (ARMA, New York City, June 2019)*, ARMA-2019-2069. Alexandria, Virginia: ARMA.

Fu, W., Savitski, A. A., Damjanac, B., & Bunger, A. P. (2019). Three-Dimensional Lattice Simulation of Hydraulic Fracture Interaction with Natural Fractures. *Computers and Geotechnics*, 107, 214–234. <https://doi.org/10.1016/j.compgeo.2018.11.023>.

Wei Fu — ITASCA Minneapolis

Fu, W., & Bunger, A. P. (2019). Influence of Spatially-Varied Natural Fracture Properties on Hydraulic Fracture Growth. In *New Directions in Geosciences for Unconventional Resources (Proceedings, William C. Gussow Geology Conference, Banff, Canada, October 2019)*. Canadian Society of Petroleum Geologists.

Luo, B., Guo, J., Fu, W., Lu, C., Zeng, J., & Liu, L. (2019). Experimental Investigation of Shear Slippage Behavior in Naturally Fractured Carbonate Reservoirs Using X-Ray CT. *International Journal of Rock Mechanics and Mining Sciences*, 122, p.104066. <https://doi.org/10.1016/j.ijrmms.2019.104066>.

Fu, W., Savitski, A. A., & Bunger, A. P. (2018). Analytical Criterion Predicting the Impact of Natural Fracture Strength, Height and Cemented Portion on Hydraulic Fracture Growth. *Engineering Fracture Mechanics*, 204, 497-516. <https://doi.org/10.1016/j.engfracmech.2018.10.002>.

Fu, W. (2018). *Hydraulic Fracture Interacting With Partially-Cemented and Non-Persistent Natural Fracture*. Ph.D. Dissertation, University of Pittsburgh.

Fu, W., Ames, B. C., Bunger, A. P., & Savitski, A. A. (2016). Impact of Partially Cemented and Non-Persistent Natural Fractures on Hydraulic Fracture Propagation. *Rock Mechanics and Rock Engineering*, 49(11) 4519–4526. <https://doi.org/10.1007/s00603-016-1103-0>.

Fu, W., Ames, B. C., Bunger, A. P., & Savitski, A. A. (2015). An Experimental Study on Interaction Between Hydraulic Fractures and Partially-Cemented Natural Fractures. In *Proceedings, 49th U.S. Rock Mechanics/Geomechanics Symposium (ARMA, San Francisco, June 2015)*, ARMA-2015-132. Alexandria, Virginia: ARMA.

PRESENTATIONS

Fu, W., & Morris, J. P. (2020). An Upscaling Approach for Multi-Stranded Hydraulic Fractures. Hydraulic Fracturing Community of American Rock Mechanics Association, *Robe Talk Series*, 30 April 2020.

Gunaydin, D., Cheng, C., Fu, W., Peirce, A. P., and Bunger, A. P. (2019). Laboratory Experimentation on Simultaneous Propagation of Multiple Hydraulic Fractures, *53rd US Rock Mechanics/Geomechanics Symposium, Workshop on Hydraulic Fracturing*, New York City, NY, 27 June 2019. ARMA.

Fu, W., J. P. Morris, P. Fu, J. Huang, C. S. Sherman, R. R. Settgast, H. Wu, and F. J. Ryerson. "Multiscale Simulations of Swarming Hydraulic Fractures Observed at the Hydraulic Fracturing Test Site (HFTS)," *American Geophysical Union Fall Meeting*, San Francisco, CA, 9-13 December 2019.

Fu, W., Savitski, A. A., Damjanac, B., and Bunger, A. P. (2018). On the Hydraulic Fracture Propagation Influenced by Spatially-Varied Natural Fracture Properties. Banff International Research Station Conference: *Hydraulic Fracturing Modeling, Simulation, and Experiment*, Banff, Canada. 3-8 June 2018.

Gunaydin, D., Fu, W., Bunger, A. P., & Cheng, C. (2018). Laboratory Experimentation on Simultaneous Propagation of Multiple Dykes and Hydraulic Fractures. *American Geophysical Union Fall Meeting*, Washington, D.C., 10-14 December 2018.

Wei Fu — ITASCA Minneapolis

Fu, W., Savitski, A. A., Damjanac, B., and Bunger, A. P. (2018). Hydraulic Fracture Propagation Influenced by Spatially-Varied Natural Fracture Properties. *American Geophysical Union Fall Meeting*, Washington, D.C., 10-14 December 2018.

Fu, W., Savitski, A. A., Damjanac, B., and Bunger, A. P. (2018). Hydraulic Fracture Propagation in Unconventional Reservoirs Under the Influence of Natural Fracture Heterogeneities. AIChE Annual Meeting, Pittsburgh, PA, 28 October–2 November 2018.