

Mosleh Eftekhari

Contact Information:

Assistant Professor

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Education

PhD (Rock Mechanics) - Isfahan University of Technology (IUT), Isfahan, Iran (2011-2015)

- **PhD Thesis title:** Numerical modeling of fracture mechanics of brittle rocks using extended finite element

MSc (Rock Mechanics) - Isfahan University of Technology (IUT), Isfahan, Iran (2008-2010)

- **MSc Thesis title:** Numerical modeling of the effect of geometrical parameters of fractures on penetration rate of TBM in fractured rock mass - Case study 'Zagros Long Tunnel'

BSc (Mining Engineering) - Isfahan University of Technology (IUT), Isfahan, Iran (2004-2008)

Awards & Achievements

Top student graduated from Master of Science, Isfahan University of Technology, Isfahan, Iran (2010)

Top student graduated from Bachelor of Science, Isfahan University of Technology, Isfahan, Iran (2008)

Publications

Journal Papers

- 1- **Eftekhari. M.**, Baghbanan. A., Hashemolhosseini. H., Determining Stress Intensity Factor for Cracked Brazilian Disc Using Extended Finite Element Method, *International Journal of Scientific Engineering and Technology*, Volume No.3, Issue No.7, pp.890-893,2014.
- 2- **Eftekhari. M.**, Baghbanan. A., Bagherpour. R., The effect of fracture patterns on penetration rate of TBM in fractured rock mass using probabilistic numerical approach, *Arabian Journal of Geosciences*, Vol.7, pp.5321-5331, 2014.
<http://dx.doi.org/10.1007/s12517-013-1070-7>.
- 3- **Eftekhari. M.**, Baghbanan. A., Hashemolhosseini. H., Extended finite element simulation of crack propagation in Cracked Brazilian Disc, *Journal of Mining and Environment*, Vol.6, No.1, pp.95-102, 2015.
- 4- **Eftekhari. M.**, Baghbanan. A., Hashemolhosseini. H., Fracture propagation in a cracked semicircular bend specimen under mixed mode loading using extended finite element method, *Arabian Journal of Geosciences*, <http://dx.doi.org/10.1007/s12517-015-1906-4>.
- 5- **Eftekhari. M.**, Baghbanan. A., Hashemolhosseini. H., Amrollahi. H., Mechanism of fracture in macro- and micro-scales in Hollow Centre Cracked Disc specimen, *Journal of Central South University*, Vol.22, pp. 4426-4433, 2015.
- 6- **Eftekhari. M.**, Baghbanan. A., Hashemolhosseini. H., Crack propagation in rock specimen under compressive loading using extended finite element method, *Arabian Journal of Geosciences*, Vol. 9: 145, 2016.
- 7- **Eftekhari. M.**, Baghbanan. A., Mohtarami. E., Hashemolhosseini. H., Determination of crack initiation and propagation in two disc shaped specimens using the improved maximum tangential stress criterion, *Journal of theoretical and applied mechanics*, Vol. 55, No. 2, 2017.
- 8- Mohtarami. E., Baghbanan. A., **Eftekhari. M.**, Hashemolhosseini. H., Investigating of chemical effects on rock fracturing using extended finite element method, *Theoretical and applied fracture mechanics*, Vol. 89, pp. 110-126, 2017.
- 9- Pourhashemi, S.M., Ahangari, K., Hassanpour, J., **Eftekhari. M.**, Evaluating the influence of engineering geological parameters on TBM performance during grinding process in limestone strata, *Bulletin of Engineering Geology and the Environment*, Vol. 80, pp. 3023–3040, 2021.

- 10-Pourhashemi, S.M., Ahangari, K., Hassanpour, J., **Eftekhari. M.**, Analysis of Grinding and Chipping Processes beneath Disc Cutters of Hard Rock Tunnel Boring Machines (Case study: Uma-Oya water Conveyance Tunnel, SriLanka), *Journal of Mining and Environment*, Vol. 12, pp. 281-297, 2021.
- 11-**Eftekhari. M.**, Bastami, M., Effect of the Replacement of Cutting Tools on the Performance of TBM in Tehran Metro Line 6, *Journal of Analytical and Numerical Methods in Mining Engineering*, Vol. 24, pp. 63-76, 2020.
- 12-Bastami, M., **Eftekhari, M.**, Ahangari, K., Sahami, G.H., TBM Crossing of Metro Station Using Semi-Ring Support, *Tunneling & Underground Space Engineering*, Vol. 8 (2), pp. 167-182, 2019.
- 13-Mazhabi. M., **Eftekhari. M.**, Application of Time Series Model in prediction of Tunnel Boring Machine (TBM) Penetration Rate, *Iranian Rock Mechanics Journal*, Vol. 1, 2017.
- 14-Mokhtarian. M., **Eftekhari. M.**, Baghbanan. A., Application of Principal Component Analysis in prediction of penetration rate of TBM using Artificial Neural Networks, *Journal of Analytical and Numerical Methods in Mining Engineering*, Vol.3, No.6, pp.33-43, 2013.
- 15-**Eftekhari. M.**, Baghbanan. A., Bagherpour. R.,The effect of operational parameters on penetration rate of a TBM using Artificial Neural Networks, *Tunneling and Underground space engineering (TUSE)*, Vol 1, No 1, 2013.
- 16-**Eftekhari. M.**, Baghbanan. A., Bagherpour. R., Numerical modeling of the effect of geometrical parameters of fractures on penetration rate of TBM in fractured rock mass, *Iranian Journal of Mining Engineering (IRJME)* vol 8 ,No 18, 2011.
- 17-Mokhtarian. M., **Eftekhari. M.**, Baghbanan. A., Prediction of penetration rate of TBM using hybrid of Artificial Neural Network and Monte Carlo method, *Journal of Engineering Geology*, vol 10 ,No 4, 2014.

Conference papers

- 1- **Eftekhari. M.**, Baghbanan. A.,Ghomri. A., the Effect of Grouting of Rock Joints on the Scour Intensity of Stilling Basin Behind a Dam, *6th Iranian Rock Mechanics Conference (Irmc6)*, 2017, Tehran, Iran

- 2- **Eftekhari. M.**, Mohtarami. E., Baghbanan. A., Hashemolhosseini. H., Determination of Tensile Mode Stress Intensity Factor in Three Disc Type Specimens Using Extended Finite Element Method, *1st National Conference on Petroleum Geomechanics*, 2015, Tehran, Iran.
- 3- **Eftekhari. M.**, Baghbanan. A., Bayati. M., predicting penetration rate of a tunnel boring machine using artificial neural network, *ISRM International Symposium 2010 and 6th Asian Rock Mechanics Symposium - Advances in Rock Engineering*, 23-27 October, 2010, New Delhi, India.
- 4- **Eftekhari. M.**, Baghbanan. A., Bagherpour. R., The effect of geometrical parameters of fractures on failure mechanism and chip formation by disk force of TBM using numerical method, *4th Iranian Rock Mechanics Conference (IRMC4)* May, 2011, Tehran, Iran.
- 5- **Eftekhari. M.**, Mahdevari. S., Framarzi. L., Leakage quantity investigation for Behesht Abad water transition tunnel using analytical and numerical approach, *8th Iranian tunneling conference*, 2009, Tehran, Iran.

Research Interests

- Rock Mechanics
- Fracture Mechanics
- Numerical Modeling: Extended Finite Element Method (XFEM), Finite Element Method (FEM), Distinct Element Method (DEM)
- Discrete Fracture Network
- Artificial Neural Networks
- Slope Stability and Design

Teaching Experience

Graduate-level courses

- Numerical modeling
- Engineering mathematics
- Slope stability
- Advanced rock mechanics
- Operational research

Undergraduate-level courses

- Differential equations
- Programming language
- Rock mechanics and Lab