Geological hazards during excavation of underground spaces
(The case study: Golab tunnel)

M. J. Rahimdel¹ & R. Bagherpour²
1) M.Sc., Department of Mining Engineering, Shahrood University of Technology, Shahrood, Iran, mj.rahimdel@yahoo.com
2) Assistant Prof., Department of Mining Engineering, Isfahan University of Technology, Isfahan, Iran, bagherpour@cc.iut.ac.ir
*) Correspondence author


Abstract
Knowledge to geology conditions and its hazards, have an important role to selection support and suitable excavation method in underground structures. Water transport tunnel is the most important such this structures. Golab water transition tunnel with 11 kilometers lengths and 4.2 meters diameter is a part of water transporting project from the Zayanderood dam to Esfahan and Kashan cities. With regard to high, calcitic and weak over burden for this tunnel, the research on probability geology hazards such as squeezing and rock burst are compared and studied. In this Research, at first, the tunnel is zoned by using of geophysics studies and boreholes, then the squeezing and rock burst potential have been discussed and comprised. Results of our studies, low to moderate squeezing potential and low Rock burst potential have been predicted for some panels of the tunnel. Finally, primary support has been suggested for this tunnel based on probable geological hazards and using numerical methods.

Key Words: squeezing, convergence, rock burst, primary support, Golab water transport tunnel.