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TWO PARAMETRIC CASES STUDY OF SYSTEM BEHAVIOUR OF NATM TUNNEL IN WEAK ROCK

Summary:

In NATM tunnels, it could be using rock bolts and shotcrete as support systems for poor-fair quality rock masses whereas ground improvement will be needed for extremely poor quality deposits. The objective of this paper will be focus on better quality rock masses where rock bolts and shotcrete are only used as primary supports of NATM of road tunnels constructed on weak rock as a case study using numerical modelling. For this purpose, the system behavior in jointed rock mass conditions has been investigated with numerical simulations for two parametric cases studies using finite element with joint software PHASE2 and this numerical approach in case of using primary support. The support elements simulated in this numerical analysis are shotcrete and rock bolts. Based on the results, design considerations have been provided.

Keywords:

NATM tunnels, system behavior, shotcrete, rock bolts, finite element with joint, PHASE 2.

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