Chongzuo tunnel support hydraulic rock

To evaluate the stability of a rock mass during tunnel excavation, high-precision microseismic monitoring technology was introduced to carry out real-time monitoring. Based on the temporal ...

Abstract. The deformation and damage mechanisms of tunnel-surrounding rock masses have always been a major problem in underground engineering, and studying these mechanisms ...

Discover how self-drilling rock bolts enhance tunnel support in fractured rock. Learn their benefits, installation steps, and real-world applications for safe, efficient tunneling.

After 40 years of development, China"s railway tunnel has made great progress in basic theory, design method, construction technology, and ...

There are mainly three separate methods, which are empirically used in rock load estimation and support systems for tunnel structures: (1) ...

The deformation characteristics of the surrounding rock of the tunnel and slope with a supporting structure were analysed using the FEM ...

The tunnel displacement and support pressure during the entire process of support-surrounding rock interaction are obtained, which are in agreement with the 3D ...

This paper establishes a strong support system suitable for a squeezing tunnel for the purpose of addressing problems exhibited in the extreme deformation of rock mass, ...

The safety of tunnel construction relies heavily on the construction method and the support technology. The essence of excavation is the release of surrounding rock stress. Excavation ...

With the continuous deepening that humans exploit underground space, tunnel engineering passing through sensitive strata, e.g., ultralarge buried depth, high water ...

Improving the flexibility of the support system is an effective measure to prevent structural failure caused by large deformation of the surrounding rock in tunnels passing ...

Results in this case study showed significant effectiveness of the support systems along with a safe and efficient construction process. The tunnel support system proposed in ...

Rock-support interaction is one of the most core issues in underground engineering, which is of major interest

to supporting structure design, construction safety and ...

Tunneling in complicated geological conditions frequently encounters problems with squeezing ground, large ground deformation, rockbursts, asymmetric deformation, non ...

When the deep tunnel passes through a water-rich fault zone, it is prone to disasters such as large deformation of soft rock, which brings great ...

In this research, we mainly focus on an improved compound support system for a coal mine tunnel in a densely faulted zone, in which a pre-grouting method and the following ...

The stability assessment of a potential tunnel, especially a tunnel excavated under complicated geological conditions, is an essential task in tunnel design because it helps to ...

The deformation control of surrounding rock is a crucial aspect in the design and construction of tunnels that traverse weak geological ...

In this paper, we used two empirical rock classification systems of rock mass rating (RMR) and rock quality tunnelling index (Q-system) for the support design of a tunnel in ...

The deformation control of surrounding rock is a crucial aspect in the design and construction of tunnels that traverse weak geological formations. This study developed a three ...

Tunnels and underground excavations - Tunneling techniques: Tunnels are generally grouped in four broad categories, depending on the material through which they pass: soft ground, ...

In addition, the conditions of further deterioration of surrounding rock mass quality, such as weak structural plane and construction support tunnel ...

In this tunnel, an unexpected portion of 70 linear m of the tunnel consisted of sedimentary deposits of glacial origin (tills) and a weathered, soil-like rock mass. In the ...

Through the analysis of the specif-ic characteristics of high geostress rock, the deformation of supporting structure in the process of tunnel construction, the falling of rock mass in the ...

In addition, the conditions of further deterioration of surrounding rock mass quality, such as weak structural plane and construction support tunnel excavation, were involved in the traffic tunnel ...

The aim of this study is to investigate the effect of tunnel shape and support pattern on the deformation, failure zone and stability around a tunnel located in a coal rock mass in ...

<p>This study analyzes the large deformation failure mode and mechanical mechanism of tunnel surrounding rock, with an aim to lessen the damage of high ground stress soft rock tunnel ...

Therefore, a model is put forward to analyze the mechanical behavior of a deeply buried circular hydraulic tunnel jointly supported by double-linings and point anchored rock ...

Tunnels and underground excavations - Tunneling techniques: Tunnels are generally grouped in four broad categories, depending on the material through ...

Based on engineering geological data, site surveys, and the temporal and spatial distribution characteristics of microseismic (MS) events, an MS monitoring system was developed in this ...

The selection of support types and the determination of parameters under large deformation of surrounding rock in deep hydraulic tunnels have always been the focus and difficulty of ...

Aiming at the large deformation of surrounding rock during tunnel construction under high ground stresses, this paper takes a high ground stress soft rock tunnel project in ...

The surrounding rock of the Taoshuping tunnel is fine silty sand in a plastic flow state after encountering water, which leads to inferior stability of the surrounding rock and extremely ...

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