Rock Drill Reliability Analysis

In this study, drilling rate index (DRI) is attempted to predict based on UCS and Brazilian tensile strength (BTS) of rocks. Simple and multiple ...

This study experimentally validated the reliability of the lab-scale rock drill apparatus and investigated the effect of bit design factors on the performance of drilling. To ...

Design/methodology/approach - The study collects failure data from a two-year period for four drilling machines and performs reliability ...

This study presents the relationships between drill bit lifetime and mechanics, drillability and abrasive properties of rocks. Additively, worn-out of bit types were investigated. ...

This research focuses on evaluating the reliability, maintainability, and availability of rotary drilling machines" transmission systems through a ...

With a commitment to providing efficient and sustainable drilling solutions, LHS Rock Tools is steadily becoming a trusted name in the competitive Down-the-Hole drilling tools market.

Corresponding to the rock mechanics and anti-drilling characteristic parameters of the drilled formation, a database of high-efficiency drill bit models for drilling in the southern ...

Utilizing stress wave theory, a mathematical model for impact rock breaking is established, and the size of broken rock is estimated. Subsequently, the DEM-based ...

The verified material model was then employed into another FE drilling model to simulate rock breaking in an actual drilling scenario. This analysis sheds light on the impact of ...

This paper proposes a method for predicting rock strength based on the fusion of physical information from while-drilling tests. Using Boussinesq"s el...

Therefore, this methodology evaluates the competence of the rock as a barrier element, enhancing operational safety and maintaining well integrity. The calculated reliability ...

This analysis proved effective in identifying harmful vibrations associated with drilling into igneous rock. Rafezi and Hassani [18] applied ...

The on-site service team has established a two-way data channel that connects operations to the cloud. This

allows for data collection of real-time and related parameters of rock drilling tools. ...

Foreword Sandvik rock drilling tools are engineered to give optimal long-life performance under hard drilling condi-tions. Our customers" associate Sandvik tools with high performance and ...

Abstract Rock fabric data collected from oriented core provides supplemental information for slope stability analyses. Orientation of rock core during drilling programs has become extremely ...

The tool consists of four separate modules: iSURE® Tunnel for drill and blast design, drilling pattern design, longhole pattern, tunnel line and project files; iSURE® Report for drilling ...

The reliability you need for the productivity you demand Designed with the reliability and productivity you need in mind, the 320XPC blasthole drill is a robust electric-platform-style drill ...

This study integrates geomechanical uncertainty into pit optimization through a reliability-based slope stability analysis. Using stochastic modeling, this research evaluates ...

The first excursion failure criterion was introduced to calculate the dynamic reliability of drill string elements. Considering the random of geometry size and ...

Download scientific diagram | Drill bit lifetime for different bit diameters, plotted against VHNR (compiled according to [5], [6]). from publication: Abrasiveness ...

Abstract Stratigraphic interface characterization and strength parameter assessment of geomaterials constitute fundamental research priorities in geological and geotechnical ...

Abstract In order to alleviate the problem of tense mining succession in coal mines, this study starts from the perspective of rapid roadway excavation roadway support efficiency, and ...

Compressive strength is a fundamental parameter characterizing the mechanical properties of rock. Its accurate determination serves as a prerequisite for stability analysis of ...

The high-end surface rock drill rig market is currently dominated by international brands. Large international companies such as Sandvik and Epiroc entered the market early and have a ...

In underground engineering, understanding rock strength parameters is fundamental for rock classification and evaluation, significantly influencing the design and ...

Considering the random of geometry size and mechanical property parameters of drill string in deep & ultra-deep wells, the drill string system was dispersed into ...

10 Consequently, deterministic methods prove inadequate for the analysis of rock drillability. 11 Nonetheless, the reliability analysis, which incorporates the uncertainty surrounding these ...

To address these challenges, we undertook equipment development, laboratory tests, and theoretical research. Initially, we established a large-scale experimental platform ...

Percussive drilling shows excellent potential for promoting the rate of penetration (ROP) in drilling hard formations. Polycrystalline diamond compact (PDC) bits account for ...

Rock mechanical properties play a crucial role in tunnel, mining, and petroleum engineering, and obtaining them conveniently is an urgent issue. In this study, a Rotary Drilling ...

The drifter is one of the main components that play a significant role in the percussion capability of the rock drill. The authors of the paper identified the operating ...

Accurate, rapid and effective analysis of rock drillability is very important for mining, civil and petroleum engineering. In this study, a method of rock drillability evaluation ...

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