# Article information:

FDEM numerical study on the mechanical characteristics and failure behavior of heterogeneous rock based on the Weibull distribution of mechanical parameters - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0266352X2200475X>

# Article summary:

1. A random parameter assignment method is proposed to simulate the mechanical properties and failure behavior of heterogeneous rock based on the combined finite-discrete element method (FDEM).

2. The simulation results of uniaxial compression, triaxial compression and Brazilian disc show that with the increase in the heterogeneity m value, the strength parameters and elastic modulus all increase exponentially.

3. The simulation results of tunnel excavation indicate that for heterogeneous rock with different m values, X-shaped conjugate shear failures mainly occur followed by a small amount of tensile failures.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article “FDEM numerical study on the mechanical characteristics and failure behavior of heterogeneous rock based on theWeibull distribution of mechanical parameters” provides an overview of a numerical study conducted using FDEM to investigate the mechanical characteristics and failure behavior of heterogeneous rock. The article is well written and provides a comprehensive overview of the research conducted. However, there are some potential biases in the article that should be noted.

First, there is a lack of discussion about possible risks associated with this type of research. While it is acknowledged that this type of research can provide valuable insights into how different types of rocks behave under various conditions, it is important to note any potential risks associated with such studies as well. For example, if certain parameters are not taken into account or if certain assumptions are made about how rocks will behave under certain conditions, then these could lead to inaccurate results or even dangerous outcomes if applied in real-world scenarios.

Second, while the article does provide an overview of previous research related to this topic, it does not present both sides equally or explore counterarguments to some points made in previous studies. This could lead to a one-sided view being presented which may not accurately reflect all aspects related to this topic. Additionally, there is no mention made about any promotional content included in previous studies which could also lead to bias in terms of how information is presented and interpreted by readers.

Finally, there is no mention made about any missing points or evidence for claims made throughout the article which could lead to unsupported claims being presented as fact without sufficient evidence or data backing them up. This could lead readers to draw incorrect conclusions from what has been presented in the article which could have serious implications if applied in real-world scenarios.

In conclusion, while this article provides an interesting overview into how FDEM can be used to study heterogeneous rocks, there are some potential biases that should be noted when reading it such as lack of discussion regarding possible risks associated with such studies, one-sided reporting without exploring counterarguments or mentioning promotional content from previous studies and lack of evidence for claims made throughout the article which could lead readers astray if applied incorrectly in real-world scenarios.

# Topics for further research:

* Risk assessment of FDEM numerical studies
* Counterarguments to FDEM numerical studies
* Promotional content in FDEM numerical studies
* Evidence for claims in FDEM numerical studies
* Real-world implications of FDEM numerical studies
* Accuracy of FDEM numerical studies

# Report location:

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