# Article information:

Mechanical Behavior and Rock Breaking Mechanism of Shield Hob Based on Particle Flow Code (PFC) Method | SpringerLink
[https://link.springer.com/article/10.1007/s10706-022-02286-4?utm\_source=xmol=affiliate=meta=DDCN\_1\_GL01\_metadata](https://link.springer.com/article/10.1007/s10706-022-02286-4?utm_source=xmol&utm_medium=affiliate&utm_content=meta&utm_campaign=DDCN_1_GL01_metadata)

# Article summary:

1. The shield method is the most widely used construction method for urban subway tunnels due to its complexity of geological conditions.

2. Research on rock breaking mechanism plays an important role in the analysis of the cutter load of shield machines.

3. This study investigates the rock breaking mechanism of shield hobs through theoretical analysis, laboratory test and numerical simulation to improve the efficiency of shield excavation.

# 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 provides a comprehensive overview of the mechanical behavior and rock breaking mechanism of shield hobs based on Particle Flow Code (PFC) Method. The article is well-structured and provides a detailed description of the research process, including theoretical analysis, laboratory tests and numerical simulations. The authors have provided sufficient evidence to support their claims, such as citing relevant studies conducted by other researchers in this field. However, there are some potential biases that should be noted in this article. For example, it does not provide any counterarguments or alternative perspectives on the topic, which could lead to one-sided reporting or partiality in favour of certain points made by the authors. Additionally, there is no mention of possible risks associated with using this method for shield tunnelling construction in ultrahigh hard rock sections, which could be a potential issue if not addressed properly. Furthermore, there is no discussion about how reliable or accurate these results are compared to other methods used for similar purposes. In conclusion, while this article provides a comprehensive overview of the mechanical behavior and rock breaking mechanism of shield hobs based on PFC Method, it should be read with caution due to potential biases and missing points of consideration mentioned above.

# Topics for further research:

* Shield tunnelling construction risks
* Alternative methods for shield tunnelling
* Accuracy of PFC Method for shield tunnelling
* Ultrahigh hard rock sections and shield tunnelling
* Counterarguments to PFC Method for shield tunnelling
* Reliability of PFC Method for shield tunnelling

# Report location:

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