# Article information:

An FE Simulation of the Fracture Characteristics of Blunt Rock Indenter Under Static and Harmonic Dynamic Loadings Using Cohesive Elements | SpringerLink  
<https://link.springer.com/article/10.1007/s00603-022-03214-x>

# Article summary:

1. This article discusses the fracture characteristics of blunt rock indenter under static and harmonic dynamic loadings using cohesive elements.

2. It explores the different types of dynamic loads, such as resonance enhanced drilling, axial hydraulic impacting, and rock blasting, which are used to promote rock fracture.

3. The paper also examines the constitutive response of cohesive elements in mixed-mode and proposes a 3D finite element model for blunt indenter impacting formation under static–dynamic loads.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article is generally reliable and trustworthy in its discussion of the fracture characteristics of blunt rock indenter under static and harmonic dynamic loadings using cohesive elements. The article provides an overview of the different types of dynamic loads that can be used to promote rock fracture, as well as a detailed description of the constitutive response of cohesive elements in mixed-mode. Furthermore, it presents a 3D finite element model for blunt indenter impacting formation under static–dynamic loads that can be used to simulate random initiation and propagation of cracks without requiring a preset crack.

The article does not appear to have any biases or one-sided reporting; rather, it provides an objective overview of the topic at hand with supporting evidence from previous studies. Additionally, there are no unsupported claims or missing points of consideration; all claims made are supported by evidence from previous studies or experiments conducted by other researchers in the field. There is also no promotional content or partiality present in the article; rather, it provides an unbiased overview of the topic at hand with supporting evidence from previous studies. Finally, possible risks associated with this type of research are noted throughout the article, making it clear that further research is needed before any definitive conclusions can be drawn about this topic.

# Topics for further research:

* Blunt rock indenter fracture
* Static and dynamic loading of rocks
* Cohesive element response
* Mixed-mode fracture
* Finite element modeling of rock fracture
* Random crack initiation and propagation

# Report location:

<https://www.fullpicture.app/item/e50f1b78aa7a1f828602f238d2e538b2>