# Article information:

Experimental and theoretical study of dynamic mechanical behavior of concrete subjected to triaxial confining and impact loads - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S2352710222017211>

# Article summary:

1. A series of static-dynamic combined compression experiments were performed to explore the mechanism of triaxial confining stress on the dynamic compressive properties of concrete.

2. The results show that there is an obvious strain rate effect of concrete under triaxial confining conditions, which is closely associated with the static triaxial confining stress and strain rate of impact loads.

3. A dynamic strength criterion of concrete was proposed for concrete under triaxial dynamic loads.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Experimental and theoretical study of dynamic mechanical behavior of concrete subjected to triaxial confining and impact loads” provides a comprehensive overview of the effects of triaxial confining stress on the dynamic compressive properties of concrete. The authors conducted a series of static-dynamic combined compression experiments using three–dimensional Split Hopkinson Pressure Bar equipment, and their results showed that there is an obvious strain rate effect under triaxial confining conditions, which is closely associated with the static triaxial confining stress and strain rate of impact loads. Furthermore, they proposed a dynamic strength criterion for concrete under triaxial dynamic loads, which can provide theoretical guidance for engineering construction.

The article appears to be reliable in terms of its content as it provides detailed information about the experiments conducted by the authors as well as their findings and conclusions. The authors have also provided references to support their claims, which adds to its trustworthiness. However, it should be noted that this article does not present both sides equally; rather, it focuses solely on the positive aspects and potential benefits associated with using this method for engineering construction without exploring any potential risks or drawbacks associated with it. Additionally, while the authors have provided references to support their claims, they do not provide any evidence or data from other sources that could further validate their findings or conclusions. Therefore, while this article appears to be reliable in terms of its content, more research needs to be done in order to fully assess its trustworthiness and reliability.

# Topics for further research:

* Triaxial confining stress effects
* Dynamic compressive properties of concrete
* Split Hopkinson Pressure Bar equipment
* Dynamic strength criterion for concrete
* Potential risks of triaxial dynamic loads
* Validation of experimental findings

# Report location:

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