# Article information:

Strength degradation of sandstone and granodiorite under uniaxial cyclic loading - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S1674775517301907>

# Article summary:

1. This study examines the effects of cyclic loading conditions, loading amplitude and applied stress level on the fatigue life of sandstone and granodiorite under uniaxial compression test.

2. Loading amplitude is the most important factor affecting the cyclic response of the tested rocks, with higher amplitudes leading to shorter fatigue life and greater strength degradation.

3. Granodiorite specimens showed more strength degradation compared to sandstone specimens when subjected to cyclic loading.

# 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:

This article provides a detailed analysis of how different types of rocks respond to uniaxial cyclic loading conditions, including loading amplitude and applied stress levels. The authors provide evidence that suggests that loading amplitude is the most important factor in determining rock fatigue response, with higher amplitudes leading to shorter fatigue life and greater strength degradation. Additionally, they found that granodiorite specimens showed more strength degradation compared to sandstone specimens when subjected to cyclic loading.

The article appears to be reliable and trustworthy overall, as it provides evidence for its claims and cites relevant sources throughout. However, there are some potential biases present in the article which should be noted. For example, while the authors do mention other factors which can affect rock fatigue response (such as pore pressure and confinement), they focus primarily on loading amplitude as being the most important factor in their analysis. Additionally, while they compare hard rocks (granodiorite) with soft rocks (sandstone), they do not explore any other types of rocks which could potentially have different responses to cyclic loadings. Furthermore, while they discuss failure modes under static loadings versus those under cyclic loadings, they do not provide any evidence or data for these claims beyond visual observations made during testing.

In conclusion, this article provides a thorough analysis of how different types of rocks respond to uniaxial cyclic loadings; however, there are some potential biases present which should be noted when considering its trustworthiness and reliability.

# Topics for further research:

* Rock fatigue response factors
* Pore pressure and confinement effects on rock fatigue
* Cyclic loading failure modes
* Different rock types and cyclic loading
* Static loading failure modes
* Strength degradation of granodiorite and sandstone under cyclic loading

# Report location:

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