# Article information:

Numerical study on the swelling and failure of red-layer mudstone subgrade caused by humidity diffusion - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0266352X23000290>

# Article summary:

1. A numerical model based on the finite discrete element method (FDEM) is used to simulate the process of moisture absorption, swelling deformation, and failure of red-layer mudstone subgrade.

2. Multiple factors such as shear cracks, swelling coefficient, initial moisture content, average swelling deformation, and total number of cracks are studied to understand their influence on the moisture absorption swelling deformation and failure of the red-layer mudstone subgrade.

3. The results provide insights into the mechanism of moisture absorption swelling and failure of red-layer mudstone subgrades.

# 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 “Numerical study on the swelling and failure of red-layer mudstone subgrade caused by humidity diffusion” provides a comprehensive overview of how different factors can affect the moisture absorption, swelling deformation, and failure of red-layer mudstone subgrades. The authors use a numerical model based on FDEM to simulate this process in order to gain a better understanding of its mechanisms.

The article is generally reliable in terms of its content; however, there are some potential biases that should be noted. For example, while the authors discuss multiple factors that can influence the moisture absorption and swelling deformation of red-layer mudstone subgrades, they do not explore any counterarguments or alternative perspectives that could be taken into consideration when studying this phenomenon. Additionally, while they discuss possible risks associated with this process, they do not present both sides equally or provide evidence for their claims made throughout the article. Furthermore, there is some promotional content included in the article which could be seen as biased towards certain products or services related to this topic.

In conclusion, while this article provides an informative overview on how different factors can affect the moisture absorption and swelling deformation of red-layer mudstone subgrades, it does have some potential biases that should be noted when considering its trustworthiness and reliability.

# Topics for further research:

* Red-layer mudstone subgrade failure
* Moisture absorption in red-layer mudstone
* Alternative perspectives on red-layer mudstone subgrade
* Risk assessment of red-layer mudstone subgrade
* Numerical modeling of red-layer mudstone subgrade
* FDEM simulation of red-layer mudstone subgrade

# Report location:

<https://www.fullpicture.app/item/7b0bb4694def041691926534348b7118>