# Article information:

中国科学院武汉岩土力学研究所知识管理平台(CSpace): 基于随机场理论的双线盾构隧道地层变形分析
<http://ir.whrsm.ac.cn/handle/2S6PX9GI/13525>

# Article summary:

1. This article focuses on the analysis of ground deformation caused by double shield tunneling in a typical weathering granite layer in Xiamen, China.

2. The study uses Monte Carlo strategy and finite difference simulation to analyze the ground deformation based on random field theory.

3. The results show that the variation coefficient of elastic modulus has a greater influence on deformation than wave distance, and that the surface subsidence deformation curve is closely related to the random distribution of soil modulus above the tunnel.

# 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 “Analysis of Double Shield Tunnel Ground Deformation Based on Random Field Theory” is an academic paper published in 2018 in Rock Mechanics and Engineering Journal, written by Li Jianbin, Chen Jian, Cheng Hongzhan, Hu Zhifeng, Huang Juehao and Zhang Shankai from various institutions such as China Academy of Sciences Wuhan Institute of Rock and Soil Mechanics and Hunan University Civil Engineering College. The paper presents a comprehensive analysis of ground deformation caused by double shield tunneling in a typical weathering granite layer in Xiamen, China using Monte Carlo strategy and finite difference simulation based on random field theory.

The article appears to be reliable as it is written by experts from various institutions with relevant expertise in this field. Furthermore, it is published in an academic journal which suggests that it has gone through peer review process before being accepted for publication. Additionally, the authors have provided detailed information about their research methods as well as their findings which can be verified by other researchers if needed.

However, there are some potential biases that should be noted when evaluating this article. Firstly, the authors have only focused on one particular type of soil (weathering granite) which may limit its applicability to other types of soils or geological conditions. Secondly, while they have provided detailed information about their research methods and findings, they have not discussed any possible limitations or risks associated with their approach which could lead to inaccurate results or conclusions if not taken into consideration. Finally, while they have discussed some potential implications for design calculations for double shield tunnels in Xiamen area based on their findings, they have not explored any counterarguments or alternative approaches which could lead to different results or conclusions if taken into consideration.

In conclusion, while this article appears to be reliable due to its authors’ expertise and its publication in an academic journal after peer review process; there are some potential biases that should be noted when evaluating it such as its limited scope (only focusing on one type of soil), lack of discussion about possible limitations/risks associated with its approach and lack of exploration into counterarguments/alternative approaches which could lead to different results/conclusions if taken into consideration.

# Topics for further research:

* Double shield tunnel design calculations
* Ground deformation analysis
* Random field theory
* Monte Carlo strategy
* Limitations of tunneling in weathering granite
* Alternative approaches to tunneling analysis

# Report location:

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