

Your review report

Manuscript

Change of Temperature Field Around Different Drainage Structures in Cold Region Tunnel Based on Model Testing

Feedback for the author(s)

Comments to the author(s)

The manuscript presents the authors' studies for temperature field variation around different drainage structures in cold zone tunnels. A model of the tunnel and a system of drainage structures has been built in the laboratory with a carefully selected size and depth ratio along with the similarity of the tunneling properties, and the properties of the rock surrounding the tunnel in the model and in reality. The study results are interesting to the reviewer and have good reliability. The paper fits well within the scope of the Journal. Some of the issues that need to be fixed for the manuscript before it can be published include:

- 1, Attention should be paid to the appearance of reinforcement in the tunnel lining because the reinforcement has a great influence on heat transfer, thus, affecting the research results;
- 2, With the use of PVC pipes utilized as both the central drainage ditch and the anti-cold drainage holes in the model, the manuscript has conducted experiments to measure temperature variation and determine temperature values at other locations of the zone around different drainage structures in the tunnel. However, the manuscript should explain why PVC pipes are used in the central drainage ditch and anti-cold drainage holes in the model and not other materials. It is also necessary to provide further analysis and explanation about the operation and influence of PVC pipes when working on the change of temperature fields around different drainage structures in cold region tunnels;
- 3, There should be a corresponding conversion between the results of the change of temperature field around different drainage structures in cold region tunnel based on model testing in the laboratory with the results of the actual tunnel. This conversion would enable the validation of the study's reliability;
- 4, The equations should be numbered consecutively throughout the whole manuscript. The quantities in the equations must be fully explained with their respective units;
- 5, In the manuscript, it is not allowed to repeat the sentences written in the manuscript (in section 2.1.2 repeat the content of paragraphs in section 2.1.1);
- 6, Make the necessary adjustments to the manuscript in order to conform with the journal's template.

Confidential feedback for the Editor

Your recommendation

- *Revise*

Is the study design appropriate to answer the research question (including the use of appropriate controls), and are the conclusions supported by the evidence presented?

- *Yes*

Are the methods sufficiently described to allow the study to be repeated?

- *Yes*

Is the use of statistics and treatment of uncertainties appropriate?

- *Yes*

Is the presentation of the work clear?

- *Yes*

Are the images in this manuscript (including electrophoretic gels and blots) free from apparent manipulation?

- *Yes*

Confidential comments to the Editor