

We thank Dr. Medici for constructive suggestions. In the following, Dr. Medici's comments are shown in *italic fonts*, and our responses are shown in regular fonts.

*Lines 23-54. Specify the most novel aspect of the research.*

We will add a sentence in the abstract, and also add a few sentences in the introduction and conclusions to indicate the novel aspects more explicitly.

*Lines 42-43. "complex flow pathways consisting of fractured rock matrix and conduits". Insert recent literature on fracture and conduit flow in palaeozoic and mesozoic carbonate aquifers.*

- Medici, G., Munn, J.D., Parker, B.L. 2024. Delineating aquitard characteristics within a Silurian dolostone aquifer using high-density hydraulic head and fracture datasets.

*Hydrogeology Journal*, 32(6), 1663-1691.

- Jourde, H., & Wang, X. (2023). Advances, challenges and perspective in modelling the functioning of karst systems: a review. *Environmental Earth Sciences*, 82(17), 396.

We will cite appropriate references on the flow pathways in fractured rock matrix and conduits in karst systems.

*Lines 56-100. What about minor faults? Any link with the small-scale karst landforms that you describe?*

In Line 92-93, we stated that several shafts, dolines, and limestone pavements (i.e. small-scale karst landforms) were observed on the plateau area south of Burstall Pass. Some of these karst features are located along the synclinal axis or transverse faults. We will add this information in the revised texts.

*Lines 538-539. There are several other relevant researches on karst in mountain ranges in the Jura and the French/Swiss Alps. It would be good to enlarge the comparison.*

We will include the literature from the alpine regions of Switzerland, Germany, and Italy suggested by other reviewers.

*Figure 2c. Syncline beds or tectonic foliation on the back? Please, specify if there is a link between the figure and the conceptual model in Figure 1.*

The layering of the rocks by the glacier in the photograph indeed demonstrates syncline beds. We will indicate this in the figure caption.

*Figures 3 to 5. Make the figures and the graphs larger.*

These graphs were inserted in the Word template just for reviewing purposes. Font sizes in this figures will be sufficiently large even when the graphics are reduced in the final production. We will keep the figure sizes unchanged at this stage, and will adjust them if requested by the publisher at a later stage.

*Figure 6. You need to report the days on the horizontal axes on the graph of water temperature.*

Dates are indicated in Figures 6a and 6c. We believe the reader can use these dates in Figure 6b as well. The dates are not included in Figure 6b to make the entire figure package compact. We will keep the format of the figure as is.

*Figure 7. You need to report the days on the horizontal axes for all the graphs.*

Please see our response to the comment on Figure 6.

*Figure 9. Make this graph on tritium larger.*

Please see our response to the comments on Figure 3 to 5.

*Figure 10a. Is it clear enough the link between the conceptual models in Figs 10c and 14.*

We will revise Figure 14 in response to the comments by other reviewers, and modify the explanation of Figure 14 in the revised texts. We will state the link between radon behavior (Figure 10c) and the conceptual model of karst system (Figure 14) more explicitly in the revised texts.

*Figure 14. Write on top of the cartoons what the two block diagrams represent.*

We will add the labels for the two diagrams.