Detailed comments to the paper
"Water flow timing, quantity, and sources in a fractured high mountain permafrost rock wall"
by Matan Ben-Asher, Antoine Chabas, Jean-Yves Josnin, Josué Bock, Emmanuel Malet, Amaël Poulain, Yves Perrette, and Florence Magnin

Major/moderate comments.

1. Data analysis relies upon a "moving window cross-correlation" scheme. While this is cited at lines 256-258, no explanations on the algorithm are provided. How is the algorithm parametrized in terms of moving window size? How does the choice of the moving window impact on the analysis? The Authors should also carefully describe between which variables are cross-correlations evaluated as this is somehow not clear throughout the manuscript. Finally, the results of the cross-correlation analysis are depicted in a figure included in the supplementary (Figure S3), thus limiting their visibility. I suggest the Author carefully explaining what they did, adding more details about the advantages and the limitation of the method employed, and including these results (onto which the data presentation and discussion then build upon) in the main body of the paper.

2. The presentation of the data in the Results section (Section 4) is somehow long, and some parts could be better rendered and communicated to the reader through graphical representations. Data description appears somehow "scattered" as it is divided in many subsections. I suggest increasing the quality of graphical representations (see also comment #3) and shortening data description merging sub-subsections (for example: merge 4.1.x in a single subsection 4.1).

3. Increase the overall quality of all figures and associated figure captions. While the dataset collected by the Authors is relevant, the graphical representation of the results is extremely poor. I strongly suggest revising all figures, with particular focus on Figure 7. Here, some y-axis labels are missing. Figure captions are also extremely synthetic, unclear, and/or incomplete. Each caption should fully explain figure content and describe each sub-panel.

Minor comments.

4. Please carefully revise the use of English language.
5. The date format is not consistent throughout the text.
6. Some internal references to figures/tables are missing throughout the text (e.g., lines 272, 281 etc).
7. Line 15. Replace "fluorescent tracers" with "fluorescence of tracers".
8. Line 18. Acronym "AT" has not been defined yet. Avoid acronyms in the abstract for clarity.
9. Line 159. What does "original mineral water" mean? Is it water collected from the site?
10. Line 162. Replace "new concentrations" with "new solutions". Then, specify concentrations at which solutions are prepared.
11. Lines 165-166. A verb is missing in this sentence.
12. Line 174. Replace "isolate from" with "isolate them from".
13. Line 199. There is a typo, "Acid-Amino-G" should be "Amino-Acid-G".
14. Line 234. There is an extra numbering "3.6".
15. Lines 241 to 247. Punctuation in the equations is missing.
16. Line 263. The sentence "these include data from 109" is somehow incomplete and unclear.
17. Line 368. "zero-curtain period" should not be italic.
18. Line 421. What do you mean by "corrected at 25°C"?
19. Line 441 (caption of Figure 10). "temperature" instead of "T".