



EGUsphere, referee comment RC1
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Comment on egusphere-2022-475

Xiaoying Zhang (Referee)

Referee comment on "Numerical assessment of morphological and hydraulic properties of moss, lichen and peat from a permafrost peatland" by Simon Cazaurang et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-475-RC1>, 2022

Reviewer manuscript #hess-2022-475 titled "Numerical Assessment of Morphological and Hydraulic Properties of Moss, Lichen and Peat from a Permafrost Peatland" by Simon Cazaurang et al.

General Comments $\frac{1}{4}$

This manuscript mainly presents a numerical assessment approach for the morphological and hydraulic properties of Western Siberian Lowland ground vegetation samples (*Sphagnum* moss, lichens, peat) by tomography scans. The numerical method based on digital X-CT recombination of samples can obtain the porosity and hydraulic conductivity. It provides a way to quantify hydrological properties of the bryophytic cover in permafrost-dominated peatland catchments. Overall, the contents of the manuscript are interesting. Logicality of the paper is clear, and the results are well discussed and explained. However, there are some issues I concerned after I had read through the paper.

Comments:

- It seems quite complicated to obtain the porosity with the method the authors proposed compared to the traditional experimental method. In general, the advantage

- Is the application promising like what I proposed in the beginning? Why this hard work is worthy if your only goal is to get same values.

Minor:

- In Table C1, please add the specific surface area and porosity data of samples obtained from image processing.
- In Table C4, Please check whether the symbols are correct, such as d_{Sph} , σ_{S-T} , and d_{Thr} .
- In the abstract, summary and conclusions, the authors should add supplement contents about the limitations of this proposed model method, as well as the scientific importance of this study.