Comment on essd-2022-124
Anonymous Referee #2


The authors provide the Tibetan Plateau lake-catchment characteristics dataset, which contains a wide range of information such as topographic, climatic, land characteristics, and anthropogenic activity characteristics. The dataset will be a valuable input for relevant hydrologic or climatic studies in the region. The manuscript is generally well written, clear, and easy to follow. I have only a few comments on the manuscript.

General comments:

- The authors extract catchment attributes from various exiting datasets, such as MERIT Hydro dataset, SoilGrids, CMFD. Please add more descriptions of how those data are generated/obtained (are they observation-based? model-processed? machine learning-based?).
- Given the use of existing datasets for obtaining the lake characteristics, I think the first part of the data development, i.e. catchment delineation is the critical step in your data development. Can you explain more about what kind of methods could be applied, and why you chose your method (instead of using Liu et al, 2020, which already exists) and any limitations/uncertainty of the method?
- I am not sure if I did something wrong, but I failed to connect to FTP to see the LCC-TP. I got the error saying "Home directory not available - aborting". - can you provide the full path of the dataset?

Specific comments;

Fig.2: it would be helpful if you mark the first, second, and third steps (L82; “Three
steps”) of the procedure also in the figure.

Fig.4: until when does the "continue" repeat (i.e. from “stack is empty?” to “push its upstream pixels into tack”)?

L165-167: do you mean you provide multiple relief values computed with different window sizes? What is the purpose of using multiple window sizes?