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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Are the effects of vegetation and soil changes as important as climate change impacts on hydrological processes?" *by* Kabir Rasouli et al.

Anonymous Referee #2

Received and published: 9 July 2019

The paper addresses a very relevant topic with high scientific and applied implications. Used methodology is robust and results of high interest. However, I agree wit reviewer 1 that the paper is very difficult to be read because of excessive information on the one side, and because current structure is currently unclear. I think is necessary to select more the information and to facilitate to readers the lecture. Once this will be achieve, it will be a great contribution for the Journal and most important to the field of mountain hydrology.

Specific comments.

-The abstract is not very informative now, it does not inform about the sign and magni-

tude of predicted changes.

-Line 9. I would not say "seldom studied" Impact of climate-vegetation changes on hydrology have been widely studied in many areas; the most novel of the study is to focus on snow dominated basins. -Line 14. Not sure if "but" is appropriate here. I would say ...SWE "and" increased evapotranspiration. -Line 16. It is not stated before that soils have been also perturbed.

- Introduction needs better organized. The literature review are mixed with the objectives. I would detail the objectives at the end of the section. - Paragraph in lines 45-50 needs to be better organized. -Lines 57-60 are highly repeated with previous paragraph. -Lines 65-80 can be moved to methodology. - Can you incorporate in Figure 1 the applied changes to soils? - Line 157- "changed" instead of "changes". - I would convert lines 185-200 into a table. -Section 2.3. Did you perturbed T and P, or all the variables?

- Figure 1 is absolutely necessary to understand methodology, may be you can use a similar template to provide a fast view of the most important hydrological changes at each site and under different environmental changes. - Many parts of Results are in reality discussion. I would separate better the contents or I would create a results and discussion section.

-Line 219. Turkey's test should be presented in Methods section. -Line 298. It is interesting to see snow cover insensitive to vegetation when many studies point out the opposite.

- I do not see the point of a section 3.2 about snow characteristics when 3.1 also presents changes on snow.

- Are the hypsometry of the three catchments similar or different? how this may affect the results?. - MCRB is the only with predicted deforestation; is this the reason why snow is the most resilient to CC? - Are normal the very low values of sublimation in

WC and RC?

I hope my comments will result useful when preparing the revised manuscript.

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