

**Response to reviewer comment #2.** Note reviewers' text is shown in **blue**, with responses in **black**.

Several times the authors mention “meltwater pathways” from the glaciers to the landscape. I think they should add more clarification on that phrase. I.e. physical routing of water? The model grid cell resolution certainly cannot handle the supraglacial drainage network on these glaciers (I'm curious to see how they will handle that in the future). Or do they mean the ways in which meltwater is generated? i.e. ice surface or subsurface?

We agree this can cause confusion and have changed “meltwater pathways” to “stream channels and streamflow” in Line 62 and 436. We have also changed “pathways of meltwater” in Lines: 7, 56 and 83 to “streams”.

This modification to the model was optimized for a very specific point location on the Commonwealth Glacier, a relatively cold, low-melt, location. While the overarching processes and modifications will hold, there is a lot of variability across glaciers in the MDV. I think the discussion should include some acknowledgement and discussion of how different the energy balance dynamics might be across glaciers in the MDVs and how this will be taken into consideration in the expansion of this model.

This is an interesting consideration, however it is beyond the scope of this paper.

Several times, the authors mention “bare land surfaces and soils”. I'm confused what they mean by this since all locations without ice, snow or lake, are bare land. Most of those locations have soils except for some exposed bedrock. What is the point of this phrasing?

We have changed “bare land surfaces and soils” to “bare land” in Lines 7, 57, 60, 138, 140 and 432.

The “bare land” specifically refers to the USGS 24-type land use land cover product used in the land surface model. WRF-Hydro/Glacier can be run over different land surface types (including vegetation).

There are multiple locations where the authors have sentences or whole paragraphs laying out the content of the paper or section. I think this is unnecessary as each section header effectively does that job. These locations include: the last paragraph of the introduction, the introductory paragraph to section 4, the first paragraph of section 4.2, and the introductory paragraph to section 5.

We kept the last paragraph of the introduction because it outlines the structure of the paper. As suggested, we have removed the other paragraphs mentioned.

Note to the Editor: if you feel strongly that the last paragraph in the introduction should be removed, then I am also comfortable with it being deleted.

I recommend designating what was used in this model in italics and bold in figure 1. It is not obvious enough with italics alone.

We have underlined the italics in Figure 1 to highlight what components of WRF-Hydro/Glacier were used. Bold was confusing with the different model names which are also in bold.

In section 6 the authors use the term “soil absorption of meltwater”. I believe what they are actually referring to is transmission losses of water to the hyporheic zone in stream channels. There are several papers that describe this process well for the dry valley streams. I recommend the authors cite them and use proper terminology.

WRF-Hydro/Glacier does not model the hyporheic zone at this point, though this can be an important process in longer streams. The “soil absorption of meltwater” means water that is absorbed by the soil.