

Interactive comment on “Hydrometeorological data from Marmot Creek Research Basin, Canadian Rockies” by Xing Fang et al.

Anonymous Referee #2

Received and published: 1 February 2019

GENERAL COMMENTS

This manuscript describes two long-term datasets, (1) a historical time period (1962–1987) and (2) a modern time period (2005–2016), from the Marmot Creek Research Basin in the Canadian Rockies. These data provide much-needed insight to changing weather patterns in northern high-altitude regions, and could easily be used to perform a number of important modeling and climate sensitivity studies. The authors’ description of the datasets is concise and coherent, and the paper is structured in a way that makes it easy to read. I recommend this manuscript to be published once these minor revisions detailed below are addressed.

1. Since this seems to be the defining hydrometeorological dataset for the MCRB, it would be helpful if some of the spatial information necessary for hydrological analysis

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of the basin were delivered alongside. Then any researcher looking to use these data for a spatial modeling study would not have to look elsewhere and derive their own digital elevation models, vegetation masks, basin masks, stream networks, etc.

2. The README.txt file contains a huge amount of information about the individual files. However, much of the information is repeated ad nauseum making this README file almost impossible to navigate. My suggestion would be to remove the repeated information and/or consider using markdown language to make the information easier to comb through.

3. The figures and tables include site description information, but the dataset itself has no mention of these important metadata. A brief paragraph within the README file describing where this site information is located would be very helpful.

4. The purpose of the **publication_9-2018-10-16-22-08-40-sha256-sums.txt** file within the dataset folder is not apparent.

5. There are a great deal of acronyms in this manuscript. An appendix listing the acronym definitions just before the References section would help some of the page flipping and searching.

SPECIFIC COMMENTS

pg. 2, line 24 - AEP is not previously defined.

pg. 3, Site description section - This section is all one paragraph but could benefit from being split into two, three, or even four individual paragraphs.

pg. 6, line 4 - I have to question these reported wind speed measurements. From the specifications of the R.M. Young 05305 anemometer, the threshold sensitivity of the instrument is 0.4 m/s. The wind speeds in the sheltered sites seem to be below the measurement threshold that the sensor can measure. In my experience, wind speed measurements should be capped at a lower limit of around 0.4 m/s due to limitations of the internal bearings that cause inherent noise in the data.

pg. 6, line 11-15 - When calculating the mean incoming solar radiation, are nighttime hours included?

pg. 7, line 21-22 - The last sentence of this paragraph is unclear. When you say 'detailed survey data', are you just referring to occasional months with two measurements? The reader could also take that to mean the data include individual hole-by-hole SWE measurements, which is not provided here.

Figures 4–8 - Include some light gridlines in these plots make them easier to comprehend.

Figure 10 - The data in each of these plots are not from the same stations, so I suggest making them different marker types and including a legend.

TECHNICAL CORRECTIONS

pg. 8, line 12 - Replace 'locations access challenges' with 'site access challenges'.

pg. 11, line 7 - '...diagnose the basin response...'

Table 2 - It seems that there are problems with the reported AGS of the incoming solar radiation row for the Upper Clearing Tower and Vista View columns. For instance, below the 'Kipp and Zonen CM21 Pyranometer' there is a hanging '20', which looks like it should go below where you have an 'n/a'.

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-117>, 2018.

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