

Interactive comment on “The Cariboo Alpine Mesonet: Sub-hourly hydrometeorological observations of British Columbia’s Cariboo Mountains and surrounding area since 2006” by Marco A. Hernández-Henríquez et al.

Anonymous Referee #2

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Overall this paper is a good contribution to highlight the dataset they have compiled for an area of BC with limited observations, especially at higher elevations. Installing and maintaining stations in remote locations is very difficult and I applaud the authors in their efforts. In addition to maintaining the stations, compiling, QAQC'ing and making the data available is also a difficult task, and again the efforts of the authors to do this and provide these data to the scientific community are commendable. A general comment for the entire paper, is please show me some of the data! You cite examples of extreme windspeeds, wanting to capture differences based on elevation etc, yet you

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do not provide example data. You also have some fairly long records at a few locations, show me some climate summaries too. As a potential user, it is very useful to see some summaries so I can decide whether the data are useful. For the most part, the paper has the pertinent information required, either in the main body or in the supplemental materials. I would recommend this paper for publication with minor revisions. Below are some more details by section, with technical recommendations at the end.

The INTRODUCTION is ok, but more information related to why this network is important is needed. What is the density of weather stations in the region? How does this compare to WMO standards, or other jurisdictions? Who can use these data (ie PRISM, PCIC, validating downscaled forecast data, Provincial and Federal agencies for fire and drought, flood forecasting, avalanche forecasting, hydrological modelling etc). The second paragraph is good as it shows how these stations have supported current and past research, well referenced.

The STUDY AREA section could use additional information. Please include information about seasonality, coldest and warmest months, maybe a precipitation and temperature graph by elevation? I need some context as a reader for the overall climate of the area (maybe even use some of your data!), or use ClimateWNA. Please list the biogeoclimatic zones and reference them. Since some of the focus is on the Quesnel River Watershed, you could also include a monthly hydrograph to provide context.

In the HYDROMET STATIONS Section, please provide some more information on the overview section such as how often sites are visited to download data and perform maintenance. Also explicitly say how many stations are in the Quesnel Watershed. This section should set up the Chrono Development section better so reader can easily identify where stations are located.

The CHRONO DEVELOPMENT section should be structured better to show how stations are geographically clustered ie have a subsection heading for Quesnel River Watershed, then describe stations, and then describe other stations as they fit together.

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Consider renumbering the stations so they numerically match location ie all stations in Quesnel River Watershed are together ie 1 through 10, then the others from South to North, or some other logical grouping. When you list the stations in the paragraph, please include their elevation in brackets.

In the PRECISION AND ACCURACY section. I would like to see more information related to the calibration and how you checked for instrument drift – did you do field calibration for the tipping buckets and air temperature/RH? Were you proactive in swapping instruments ie change out every 2 to 3 years, or did you wait until they were broken. You note that sometimes old models break and cannot be replaced exactly - I assume you try to replace with similar or better specs? And also, how are you dealing with regeneration of forests and vegetation at your sites? Fairly common problem that many face, but hard to deal with. I would suggest trying to take upward fisheye photos or use drones to take an areal view at each site, good to track changes and also for users to understand the limitations of the data. ie is the trend due to climate change or encroaching veg?

Technical

Page 2, line 11-13 – please provide reference.

Page 3 line 1 – please give actual number of stations rather than “over a dozen”.

Page 4 line 16, include link to QRCC web site. Page 6 line 22 – replace “sonic ranger” with SR50 Page 7 line 2 – name the station installed at Castle Creek Glacier. Page 7 line 7 – again name this station Page 7 line 8 – what heights were they measured Page 8 line 2 – reference Ancient Forest Page 13 line 23 – reference

In Figure 4, please include elevation of each station – I know this is elsewhere, but very handy piece of info to have. Figures should be stand alone, so this info is relevant.

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-45>, 2018.