

Interactive comment on “Spatially distributed water-balance and meteorological data from the rain-snow transition, southern Sierra Nevada, California” by Roger Bales et al.

Anonymous Referee #2

Received and published: 1 July 2018

General comments: The manuscript is well written and documents the uniqueness and utility of the described data set. As such, it merits publication in Earth System Science Data. This manuscript references one university and one United States Forest Service (USFS) data release. The USFS data release contains datasets for the Bull Creek catchment, which are mentioned in this manuscript, but only in passing. I leave it to the editor to assess the validity of only partially describing linked data sets. This manuscript does describe a coherent set of measurements for the Providence Creek site and illustrate the utility of using distributed sensor clusters and integrating stream gages to measure the state of a watershed.

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My comments are minor in nature and should be easily remedied by the authors. Many of the data sets in the manuscript cover different time periods and locations. It would be useful to have a graphical representation of this to see when nodes were brought on line and how this compares to the stream gage network and any large gaps in each node/data logger. Additionally, the file hosted at <https://doi.org/doi:10.6071/Z7WC73> is very large. I suggest splitting it into its component pieces to facilitate easy access. I did find all data files to be machine readable; however, the readme in <https://doi.org/doi:10.6071/Z7WC73> would be better suited as a formal metadata XML file similar to what is found at <https://doi.org/10.2737/RDS-2017-0037>. Furthermore, the .dat files at <https://doi.org/doi:10.6071/Z7WC73> appear to be comma delimited, I suggest changing the extension to .csv to better facilitate reading of these files. It appears that these files may have been .csv files at some point as one appears to have retained a .csv extension.

There is some confusion about missing values in the data files that this manuscript references. The manuscript indicates at 5:26 that missing values are represented by blank cells; however the .dat files also contain quoted not a number ("NAN") values, which are not described in the readme or the manuscript. The readme for <https://doi.org/doi:10.6071/Z7WC73> indicates that missing values are represented as -999 and the metadata for <https://doi.org/10.2737/RDS-2017-0037> indicates that values not checked (definition needed) are given -9999 while measurements not taken are left as blank. The range of possible and missing values need to be better quantified for all data sets and adequately described in included metadata/readme files. I suggest that it may be best to leave this level of detail out of the manuscript and keep it only in the metadata/readme files included with the datasets as it will then be readily accessible when accessing the data.

Technical Comments:

1:17 - catchment area is given as 4.6 km² at 3:9

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1:22 - greatest sensor depth given as 90 cm at 4:12

2:14 - define water-measurement system

2:21-22 - redundant with previous sentence

3:9 - catchment area is given as 4.6 km^2 not 4 km^2 as mentioned earlier.

3:16-7 - land cover description redundant, combine into one sentence.

3:22 - m after 1975

4:12 - greatest sensor depth given as 90 cm but soil moisture measurements described as going to 1 m.

5:11 - change to "by the flume and weir manufacturers."

5:21 - horizontal axis in fig 5 is in day of water year, consider adding day of water year in a parenthetical after June 1.

5:26 - see no data value comment above.

Figure 1 - dangling lines from overview map should be removed.

Figure 3 - horizontal axis line missing from b. Deepest sensor depth is described at 90 cm, but soil water content is said to be measured to 1 m dept? What is the measurement area for each installed sensor?

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-69>, 2018.

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