

Interactive comment on “Spatially distributed water-balance and meteorological data from the Wolverton catchment, Sequoia National Park, California” by Roger C. Bales et al.

Anonymous Referee #1

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This is a very unique set of microclimate data from the Sierra Nevada of California. The data will be of interest to a fairly large group of ecologists, ecosystem scientists and hydrologist working in western mountain catchments. In particular, the soil moisture and temperature data are fascinating and have relevance for understanding the recent large-scale die off of conifers in the Sierra Nevada. I applaud the authors' dedication in installing and operating these stations.

I think the paper and datasets should be accepted after the correction of a few minor technical errors.

Comments on written article: 1. Page 2 line 14. "Rapidly" is vague and unnecessary.

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2. Page 3 line 14. Define the acronym WRCC. 3. Page 3 lines 21-24. There are errors somewhere in the elevations of the stations. For example, the text says that the Wolverton met station lies at 2180 m, but on Figure 2, the elevation is given as 2206 m. Similarly, for Panther, the elevation is given as 2750 m in the text, but 2618 m in Figure 2. Please correct. 4. Page 4, first lines. This seems like a sentence fragment. Please improve. 5. Page 4 lines 13-17. Please discuss how the volumetric water content sensors were calibrated. 6. Page 4 lines 18-19. Please state the scan frequency from which the hourly data were computed (5 second, 10 seconds, other?). 7. Pages 4 and 5, Example data section: The section mentions discharge data and level-loggers, but I could find no discharge data in any of the files or in Figure 3. Please add discharge data to the files or else remove discharge measurements from this section. 8. Acknowledgements: The Park name should be Sequoia and Kings Canyon National Parks. 9. Table 1. The instrument column is awkwardly aligned with the other rows. 10. Figure 2. In the uppermost image, there is a blue shaded region that is not defined – is this the region surveyed by LIDAR? 11. Figure 4. In the legend for the figure, the upper elevation, 2245 m, is less than the lower elevation, 2640. This seems like an error.

Level 1 Data Issues 1. In both the Wolverton and Panther met data, there are columns with no data. 2. In the Wolverton data, there is a redundant air temperature column with no data. 3. In the Panther data, what is the difference between average and mean windspeed? The data are identical, so one of the columns should be deleted. 4. At Sites 1 and 2, I noted some negative snow depths. Perhaps an offset could be applied? 5. At Site 3, there seems to be an issue with soil temp_P3_0_10 cm. The values seem too high, relative to the other sensors, for ~ October 2011 through June 2012. 6. I have attached a Word document with graphs of air temperature and humidity at Wolverton and Panther. Please address the issues raised in the document about site differences.

Please also note the supplement to this comment:

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<https://www.earth-syst-sci-data-discuss.net/essd-2018-70/essd-2018-70-RC1-supplement.pdf>

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-70>, 2018.