Thank you very much for providing detailed comments, which allowed us to refine the manuscript and the dataset.

Please see the comments provided by the referee in black font, and our point-by-point response in blue font.

Community Comment #1 (Sacha Ruzzante)

Overall this seems like a valuable contribution to the growing number of CAMELS datasets. However, I have some suggestions to improve the usefulness of the data and to improve consistency with other CAMELS datasets.

We would like to thank Sacha Ruzzante for providing the comments and suggestions to our manuscript. In this CAMELS data set, we tried to include as many local information on the catchments as possible, while avoiding the inclusion of global data sets, which are already available to everyone. We have pointed this out below, in our detailed responses to each comment (blue font).

1. Can you include time series of glacier evolution, as was done for Camels-CH (Höge et al., 2023)? Or at minimum, have a static attribute that describes glacier cover for each catchment.

   We agree that glacier evolution is important for understanding hydrological processes in glacier-influenced catchments. Although local time series of glacier evolution do exist, they are currently under review and will become available in due course. An updated glacier inventory for New Zealand has been derived from aerial photographs taken between 1978 and 2016 (Baumann, 2021), which provides snapshots of glacier extent over time. Additionally, several studies have used digital elevation models to reconstruct changes in individual glaciers (e.g., the Fox and Franz Josef glaciers; Wang & Kääb, 2015), and more recent work (White, 2024) has drawn on global datasets for glacier thickness, velocity (Millan et al., 2022), and elevation change (Hugonnet et al., 2021). However, while these global datasets capture broad long-term trends, they tend to be less reliable for the small, fast-changing glaciers typical of New Zealand. We recognise the value of including locally derived time series in the future, but for this release, we are not in a position to include glacier evolution time series as was done for CAMELS-CH.

   References:

   Hugonnet, R., McNabb, R., Berthier, E. *et al.* Accelerated global glacier mass loss in the early twenty-first century. *Nature* **592**, 726–731 (2021). https://doi.org/10.1038/s41586-021-03436-z

   Millan, R., Mouginot, J., Rabatel, A. *et al.* Ice velocity and thickness of the world's glaciers. *Nat. Geosci.* **15**, 124–129 (2022). https://doi.org/10.1038/s41561-021-00885-z

   Wang, Di, and Andreas Kääb. 2015. "Modeling Glacier Elevation Change from DEM Time Series" *Remote Sensing* 7, no. 8: 10117-10142. https://doi.org/10.3390/rs70810117

   White, Rebecca Margaret. "An investigation into the effects of Proglacial Lakes on

Mountain Glacier Dynamics in New Zealand." PhD diss., University of Leeds, 2024. oai:etheses.whiterose.ac.uk:36693

2. Some of the static attributes are provided as categorical variables that indicate the dominant category (eg. land cover, geology). For many applications it is more useful to know the percentage of the catchment that falls into each category, rather than just the most common category.

   We agree that the knowledge on the precise percentage could be useful for many applications. Unfortunately, this information is not available from the two sources we have considered (FENZ and REC data sets). A different geological classification for New Zealand which could be used to derived percentage contribution would be available from GNS (https://data.gns.cri.nz/geology/). Since this classification deviates from the current one and also provides much more classes, we decided to keep the simpler one to avoid overly complicated attribute tables. However, we have added the reference to the manuscript for interested readers.

3. There are many useful static attributes that can be calculated but are not currently included. For example, soil characteristics from SoilGrids (Poggio et al., 2021), catchment average elevation, mean annual temperature, precipitation seasonality, etc. See other camels datasets or the Caravan project (Kratzert et al., 2023) for examples.

   Thank you for your suggestions. In developing this CAMELS dataset, we aimed to prioritise regionally relevant and locally sourced information, rather than replicating global datasets such as SoilGrids, which are already widely accessible and may not perform well in highly heterogeneous terrain where terrain complexity and low station density limit model accuracy like Aotearoa New Zealand. For example, global soil datasets are known to have limited accuracy in steep, mountainous terrain where soil observations are sparse.

   Catchment average elevation is indeed included (labelled as "elevation"), and we appreciate you pointing out the earlier mislabelling as "elevation of the gauge" – this has now been corrected in the table.

   With respect to mean annual temperature and precipitation seasonality: while these attributes may be used in other CAMELS datasets, we opted not to include them in this release for several reasons. First, mean annual temperature can be readily derived by users from the provided hourly or daily time series, and its meaning in a highly orographically complex region like New Zealand is less straightforward than in flatter continental regions. Second, precipitation in New Zealand is generally distributed relatively evenly throughout the year, with only moderate seasonality in most areas. As such, calculating a meaningful and comparable seasonality index would require first defining wet and dry seasons across diverse hydroclimates, which may not be robust or useful at a national scale.

   We recognise the value of including harmonised attributes for cross-regional model benchmarking (e.g., via Caravan), and we are open to extending the attribute set in future versions – ideally with New Zealand-specific data sources and derived attributes that reflect the unique hydrometeorology of the region.

4. Are there other climate datasets that could be included as well? For machine learning models previous work has shown that including several climate datasets in trainingF usually improves overall model skill. For example, ERA5-Land (Muñoz Sabater, 2019), the New Zealand Reanalysis Dataset (Pirooz et al., 2023) CHIRPS (Funk et al., 2015), CPC (Chen & Xie, 2008), etc. You may want to look at how these were included in other camels datasets such as Camels-BR (Chagas et al., 2020). Some of these provide daily data only, but that is what many users will want anyway. For snow-affected catchments it would be useful to have a SWE product (eg. ERA5-Land).

   Thank you very much for this suggestion to expand the local data with global datasets. Expanding the local dataset by including additional data from e.g. ERA5-Land or CHIRPS might be challenging, as it can be seen as an endorsement of such data in terms of their quality and applicability in the local context. For example, Queen et al. (2023) used ERA5 data in their work in the New Zealand context with less convincing results. We feel that data users that are keen to add such data to their analyses should obtain such publicly available datasets on their own and research if the level of accuracy suits their needs.

   Reference: Queen, L. E., S. Dean, D. Stone, R. Henderson, and J. Renwick, 2023: Spatiotemporal Trends in Near-Natural New Zealand River Flow. J. Hydrometeor., 24, 241–255, https://doi.org/10.1175/JHM-D-22-0037.1.

5. It would be useful to also provide daily aggregated streamflow and meteorology data. Most hydrologic models are built on daily data, and for benchmarking models across different research groups it is useful to know that everyone is using exactly the same data. Providing the daily aggregated data helps ensure this.

   Thank you for the suggestion. We agree that providing daily aggregated streamflow and meteorological data will improve consistency and usability, especially for benchmarking across different modelling frameworks. We have included the daily aggregated datasets to support and facilitate broader adoption of the data.

6. The paper states "Information on how to obtain permission [for the 13 gauges that require it] is provided in the readme file", but this is missing from the readme file.

   The readme-file is available in the streamflow folder. We have updated the information on its location in the manuscript to ensure the availability of this information.

7. I'm not sure what the authors mean by the "original temporal structure" in the following:"All time series data are reported in the local time zone, and include the effects of daylight saving time (DST) where applicable. No corrections or transformations were applied to standardise timestamps across the dataset. This decision was made to preserve the original temporal structure of the observations." It would be more useful if all timestamps were provided in standard time, and it is quite possible to do this while preserving the temporal structure of the data.

   Thank you, we have updated the time series to use New Zealand Standard Time (NZST which is UTC+12 hours).

8. There are some negative streamflow values. For example, station 29231, which has a number of timestamps with flow of -0.003 cms. What does this mean?

Thank you for pointing this out. We have reviewed the data and found that, in addition to the designated missing value of -9999 (which was correctly handled), a small number of other negative values such as -0.003 m^3/s were mistakenly retained during the conversion from NetCDF to CSV. Since streamflow cannot be negative, these values have no physical meaning. We have now updated the dataset to remove all such values and replaced them with NA to correctly indicate missing or invalid data.

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