

Public justification (visible to the public if the article is accepted and published):

The manuscript and dataset present a very comprehensive case for ecohydrologic studies. Some revisions are required as stated to the authors directly.

Additional private note (visible to authors and reviewers only):

Dear Dörthe and co-workers,

Please accept my apologies for the late response delayed over the holiday season and various deadlines on my side. Thank you again for submitting your work to ESSD. Since the reviewers indicated that only minor revisions were required, it is on my side to review the revised version.

****Dear Conrad,**

Please find our detailed responses below. Unfortunately, some of the comments resulted from the fact that we incorporated all comments by the reviewers (which were partly contradictory now). Hopefully we addressed all to your satisfaction now and that the paper can be accepted for publication.

Regards,

Doerthe Tetzlaff on behalf of all coauthors.

DATASET:

The DOI 10.18728/igb-fred-623.0 given in the manuscript, does not link to the actual file, which appears to reside in <https://fred.igb-berlin.de/data/package/622> (also stating the wrong DOI there). Please revise and correct the data storage, which is required to guarantee longterm workable data access. Alternatives to your FRED in-house data center are e.g. <https://www.pangaea.de/> or <https://dataservices.gfz-potsdam.de/portal/index.html>.

**** as written in our original response file: once all final edits are done in the data file (incl yours below) we will now update and finalise the doi. The final link to the correct data package is now <https://doi.org/10.18728/igb-fred-813.1>" along with the associated change(s) in the manuscript and any other metadata.**

Data description: Despite all the value of your data, it is still not very easy to reproduce how your data is structured and how to actually use it. You now include 19 lines readme, which really requires very intense study of the data and your manuscript to decipher. The included citations of Dubbert et al. (2013, 2014) are only given in the ESSD manuscript. In your manuscript you cite the dataset (see below L154ff) and in the dataset you cite this manuscript for details. However, the details are rather sparse in both...

**** This is unfortunate that the editor gets that impression as this was the result now of the comments we implemented following the reviewer's comments. These extra readme lines have been removed from the dataset again now, referring the readers to the manuscript for more details on the measurement methods. We actually added those during the revision requested by one of the reviewers in the last round. But we can see how this would cause confusion so it makes more sense to remove it. We removed the citation in the data base BUT of course refer to it in the manuscript.**

What do you mean with "Times all *reflect* local daylight saving time corrections."? So it is CET with pr without daylight saving?

**** This has been corrected by clarifying that DST times for winter are equivalent to UTC+02:00 and summer are UST+03:00**

How were the CRDS measurements calibrated and corrected for drift? How many repetitions and simple mean or any hyperbolic estimates?

**** we added that information in the manuscript text (referring the reader / user from the datasheet to the manuscript)**

The sap flow data appear hard to reproduce. You have installed 2-4 TDP probes in 12 trees of different species (of which 4 are named). An unspecified subset of this data has been averaged and is given here as L/day. As you know, there are quite some processing steps to derive a volumetric flux from the measured temperature differences including an estimate about the radial distribution of the xylem flow velocity field, xylem cross section, etc.

** yes, of course. However, we felt such extensive method description can't give so much method data. Now, we extended this in the manuscript and also refer to Kleine et al., where the method is described in more detail. We also added some additional description in the readme file as well (all trees were considered). The additional information also clarifies that the data presented is for a forest stand not for an individual tree (we've modified the sheet name to clarify this also). We have only ever used the forest stand transpiration, not transpiration for individual trees so we don't think it's necessary to include any further data here.

I have no idea what to do with this information: "Groundwater (tab name) data only begin in 2018, corrected by Jonas F. These are separate from the long-term data as the levels are reset in 2018". Why are these records separated?

**These datasets are separated as they were re-established in 2018, with a change in data collection and data management. To avoid confusing these datasets, they have been separated. This description has been added to the readme file.

What means forest north/south?

** this was an ID terminology. We have clarified this in the readme file of the dataset. It is included to distinguish the datasets (this refers to fn of fs as id labels).

Positions: UTM33 is not a unique coordinate system. Please report the EPSG code. Is it EPSG:25833? (<https://epsg.io/25833>)

**Corrected

Would it be an option to either clarify the meaning of the given column names or simply avoid abbreviations? Maybe a brief description above each table would also help clarification?

**An additional sheet has been added for further description of the abbreviations of the headers of other data sheets. For us – and respectfully - avoiding abbreviations is not an option, the headers would be too long. We were advised to remove any descriptions from the datasheets in the previous revision (hence the longer ReadMe) so this is not an option either.

MANUSCRIPT:

Abstract and Dataset: Pls. check our submission guidelines. <https://www.earth-system-science-data.net/submission.html> It is required to include "a functional data set DOI and its in-text citation" in the abstract.

** added

L119: There is an extra closed bracket. Pls. remove.

** corrected

L154ff: I do not quite understand why you cite the doi-url seven times. I suspect that you intended to refer to the different sheets in the excel file?

** because the editor asked for a repeated citation in his original comments to us prior external review. Statement by the editor back then: "Technically, your data has a DOI (<https://doi.org/10.18728/igb-fred-623.0>) and should be cited through this in the manuscript. You will be asked for this in the copy editing process anyway." We THEREFORE added the citation of the

doi throughout the text. And no, its just the one doi. We respectfully decided to leave this as it is now.

L179ff: Why are “Micro 10m and Baro” and “Van Essen Instruments” in two separate brackets? I suspect that you refer to the respective autologging DIVERS? But why do you then refer to the ATP10 Aquilite for the atmospheric pressure correction, which I suspect is simply done in the DIVER software? I find the structure of this paragraph difficult to comprehend.

** we apologise for this confusion This was wrong and is now corrected.

L189: Groundwater is a new paragraph?

** corrected.

L195ff: You have referred to isotope sampling in streams and at the AWS earlier. Maybe it is easier to understand when this is all given here? This Subsection could also include more details about the actual CRDS analysis (repeated sampling, standards, drift correction, ...).

** yes good suggestion. We moved the text and also added more information on the CRDS analysis.

Fig 3: Really difficult to see. Can this become a little larger avoiding the large margins? I do not understand the 2nd part of the caption. What do the boxes in b show? Weekly precip somewhere minus throughfall? Each box consists of 5 data points? At this scale, maybe monthly aggregates would be more legible? Maybe then monthly precip would also be a better reference than the cumulative curves in which I cannot discern throughfall from DM and in which I have no idea what the green lines are?

** we are wondering if you are they are mis-interpreting this. We clarified in the caption now that “Precipitation at Bruchmill (nearby) was used as to calculate weekly interception loss.” Re: overlapping lines, we don’t think it’s an issue that they overlap, but what’s there to see if they overlap anyway, it’s showing that they are consistent. Respectfully, aggregation also doesn’t make much sense as we want to show the variability rather than a smoothed signal as it showcases the amount of data collection.

Fig 4: This figure is quite complex but gives a nice overview about your data. The quality is rather poor which I hope is only a conversion issue. Would it be possible to merge Fig 3 and 4 into one like Fig 2 and 5 (with panes using the full width of the page)?

** as the editor points out: Fig 4 is already very complex. Also contains different data than fig 3 so merging them would be very difficult. We respectfully ask that we can keep them separate (and yes of course the figures are in the original format much higher and better resolution).

L356ff: This appears to include copied line numbers from earlier versions?

** corrected