

Comment on **essd-2020-396**

Anonymous Referee #2

Referee comment on "Multi-site, multi-crop measurements in the soil–vegetation–atmosphere continuum: a comprehensive dataset from two climatically contrasting regions in southwestern Germany for the period 2009–2018" by Tobias K. D. Weber et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2020-396-RC2>, 2021

General comments

The authors aim to provide a comprehensive dataset including multi-site, multi-crop measurements of the water, heat and carbon fluxes as well as the associated parameters in the Soil-Plant-Atmosphere-Continuum system in Germany. When the dataset is unique and complete, and be useful for the scientific community, the describing manuscript, however, is not well organized and is not easy to follow. Specifically,

- The manuscript focus too much on the description of the measurement detail (section 2). Nearly a half of the text is on the measurement detail and the site description, the description of the dataset in comparison is very simple. Surely, the measurement detail is very important. However, it can be presented in a better and clear way, such as in a table describing e.g., the specific devices, the measured method and the time duration for each parameter (an extended table 4). Besides, the sub-sections, such as field measurements (2.3), field sampling (2.4) and laboratory measurements (2.5) should be reorganized in a brief and clear way.
- The authors mixed the data measurement and the data analysis (figures 3-5) together in section 2. It is better to present separately. The authors may also consider extending the data analysis section. Since the manuscript contains so many different data, it is useful for readers to briefly introduce the dynamic of the main parameters and the difference between the two sites.
- For this dataset, many parameters in relation with soil, plant and atmosphere properties were measured. I suggest to include a figure that demonstrates all the parameters measured from soil to atmosphere, including the specific parameter, the observed depth, the time duration and others. This would make the presentation more

clearly. Note that this should be in more detail than the figure 1 in the text.

- For the provided dataset (for1695_data), a description of the data quality should be provided. Also please check the format of the text in the 00_metadata file, please provide more information for the calibration equation described in the ec1_soil_metadata file.

Specific comments

- P4L15. The description of the dataset in the follow section is better in the same order with the summarize here. For example, the soil characteristics here is in the order of (iv) whereas it is presented firstly in the section 2.
- P7L2. It is better to present Table 1 in the soil measurement section.
- P11. The author may consider placing the (briefly) data analysis (figures 3-5) in a new data analysis section.
- P14L15. Please complete the description.