

## ***Interactive comment on “A comprehensive dataset of vegetation states, fluxes of matter and energy, weather, agricultural management, and soil properties from intensively monitored crop sites in Western Germany” by Tim G. Reichenau et al.***

### **Anonymous Referee #2**

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#### Summary and general comments

Reichenau et al. presents a comprehensive dataset related to vegetation states, energy and water fluxes, agricultural management, and soil properties from four agricultural sites in Western Germany. I appreciate the efforts the authors made in detailing all these datasets; however, there are also some confusions and issues that the authors should clarify in further revisions.

(1) Scientific relevance: As the selected sites are from the same area and are all

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agricultural-based sites, I would suggest the authors further sharpen their research motivation by stating how these datasets can facilitate understanding agricultural ecosystems and then generalize to the general ecosystem. Right now, it seems we can use these datasets to understand all aspects of ecological settings as the introduction specifies. In addition, as flux datasets from eddy covariance flux towers are also available, the authors need to point out what are the new items we can find in this dataset. What is missing before and what would be new data that are important to further gain insights of ecological systems? In addition, the provision of these data from only this area also raises the question whether these data are representative to investigate issues such as impacts of climate change on agricultural ecosystems? The authors may also want to clarify.

(2) Datasets: there are quite many missing data shown in Excel as NA. I am not sure whether it makes the whole data series. The authors also need to document why these missing data are there and if gap filling algorithms were used (at the least the manuscript provides gap filling algorithms) and/or needs to be used. In addition, data documents from all these sites are not consistent, for example, EC folder in all the sites except huertgenwald. Management data from the merken site only have a couple of years data. Why some years of data are missing? Some sites do not have meteo.csv? Overall, the data are not as detailed as those described in the manuscript. It is also hard to understand some of the excel documents since no metadata are provided to explain the variables? For example, what is u, v, w in the fluxes\_MEF01\_EC\_001\_2011?

(3) While the authors attempt to detail the datasets, it is necessary for the authors to provide at least several application examples that how these datasets can be used. Particularly, as the authors trying to understand “patterns in soil-vegetation-atmosphere-systems”, it would be helpful to see some research results from this dataset. This would also help clarify how these datasets can be used even if there are missing data. I do not expect complicated application examples, but generally for example vegetation states and temperature/precipitation can be used to understand

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climate impacts on agricultural ecosystems.

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