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 #3

Received and published: 28 April 2020

The authors generated a comprehensive dataset at four agricultural sites for the development and validation of hydro-ecological land-surface models, and as well as the remote sensing products. Thank the authors for the efforts on the data collection. As the authors stated that one of the goals of this dataset is for the validation of the remote sensing products, there are still some places that need the authors' clarification and consideration. I recommend a minor revision before publication. Section 4, P5 L14: The leaf area index was measured by the destructive approach at a very small sampling area, e.g., 40 x 40 cm. I fully understand that this was due to the limitation

of labor, while the spatial representativeness of the measurements can make the direct validation of the remote sensing products (10 m~ 1km) to be challenging. The inhomogeneity of the vegetation states over the study area may need to be evaluated by the UAV data or very high spatial resolution data if available, especially at the same periods of the measurements. The corresponding high-resolution data can be very important for bridging the gap between the point-scale field measurements and satellite-level remote sensing products, as the two websites below. Even the information about the availability of the high-resolution data with good quality can also be very helpful for the users. http://w3.avignon.inra.fr/valeri/fic_htm/database/main.php http://calvalportal.ceos.org/web/olive/site-description

Besides, the temporal frequency of the LAI measurements collected from 2007 to 2017 may need to be clearly explained in the manuscript for the readers. The publicly available LAI measurements at the seasonal cycle are rare and valuable for the validation of the current remote sensing products in time series.

For the linkage of the vegetation and soil properties with remote sensing data, in addition to the canopy structure parameters such as LAI, not quite sure whether there are also leaf and soil spectrum, leaf chlorophyll and water content, and photos of the vegetation canopy at different growing stages available. If yes, these data would be very useful for the radiation transfer modeling and analysis over the agricultural ecosystem.