We would like to thank Anonymous Referee #2 (AR2) for their constructive and positive comments. Below, we will respond to the comments made by AR2: the comments from AR2 in black, our response in blue.

This is a nice work that show the relation found between study in situ soil moisture profile (SMC) measurements of the Raam and Twenthe networks in the Netherlands, with two satellite derived (RS) vegetation indices (VIs), NIRv and VOD, during the 2018 summer. I believe that this manuscript has the quality standards of the journal and presents a very interesting work combining field measures with remote sensing measures. This is an important point. However, I have a few comments to the authors so the reader will find it easier to understand:

Thanks for writing the review and the positive feedback. Below we will respond to the comments to explain and/or elaborate.

1) In the abstract you used a lot of acronyms and that is ok. But when you say "and its effect on GPP in models" I suggest to put first what is that GPP. You use NIRv and VOD but you say that they are vegetation indexes and that is fine, but what is GPP?

We agree with AR2, and we will make sure we explain each abbreviation at its introduction.

2) Deeper are the measures in soil are this really reflected by the VIs? or this is just a consequence of the correlation among depths of SMC. For me, it is hard to see that a measure at 80 cm depth can be reflected in RS bands. But the measures between 80 cm and 10 cm can be correlated. Can you show this correlations among depths?

It is true that the soil moisture measurements are correlated. However, we do not use RS observations of soil moisture, but use remotely sensed vegetation indices. Here, we assume that the vegetation indices reflect the state of the soil column reachable by roots, i.e. averaged over the whole root zone. Since the depth of the root zone over which the water uptake takes places is not known a priori and can even change over the course of a drought, we evaluate the relation with vegetation indices over different averaging depths. Hence when the vegetation indices show a decline, this matches with the available water in the soil column.

3) Are precipitation anomaly and SIF anomaly calculated in the same way that NIRv anomaly?

Yes those are all calculated in the same way. We will clarify this is the next version of the manuscript.

4) You really have three years. Calculating these anomalies means that you have the average of two years and then compare it with 2018. Is it right? Perhaps you should describe 2016 and 2017 as quite normal years, otherwise it looks too few years to consider the estimation a week anomaly.

This is correct, we will put some more attention on how 2016 and 2017 represent normal condition.

5) Figure 2. This figure is very important to understand this nice work. You should improve it as you talk about black lines (almost I cannot see it), dashed lines, etc. Please, make it more clear. I imaging that this is the average of an area. Isn't it? If I understood it right just indicate it in the label of this figure. You mention in this label

Figure 3. I think that you shouldn't. Another point is that if you improve Figure 2 then the data use from Figure 2 in Figure 3 will be easier to understand.

We will clarify the figures and the captions by better explaining the components of each figure, and also clarify the relation between the individual figures.

6) Figure 3. You mention in the label "vegetation productivity". What I can see is the relation between VIs anomalies with SWC. Between VIs and vegetation productivity which is the relation? This relation is using a time lag of 0. Did you try the relation with some time lag of 1 or 2? You mention in the introduction the lag that exist between meteorological anomalies and VIs anomalies. Exist any lag between SWC and VIs?

We understand the confusion cause by "vegetation productivity", as this was an effort to describe both NIRv and VOD. We will clarify this in the next version. We did not use any time lag, as this is just a scatter plot between two variables.

7) In table 1 you show the normalized critical soil moisture content in brackets. I believe that will be more interesting to see the s.e. of this estimation.

An indication of the reliability of the determined crictial soil moisture is already presented in Figure 5 using the horizontal lines, which are indicative the of the s.e.. We believe it is more interesting to see how these determined values compare to the measured soil moisture values.

8) In the abstract you said the nonlinear relation between negative soil moisture anomalies and VIs reflects that the drought was develop weeks before the first reduction in vegetation indices. Perhaps you should explore how many weeks before.

An estimate between the offset between the first reduction in soil moisture and the first reduction in vegetation indices is represented by the horizontal lines in Figure 2. We will quantify this period.

Finally, this "anatomy of" expression in the title I will change it for other or just suppressed it.

We believe using this wording nicely explains how we try to understand the different dynamics of the summer drought in this region, hence the "anatomy of". Note that referee #1 noted no issues with the title, and that we have used similar titles in 2 previous HESS publications (see Brauer et al. 2011, Anatomy of extraordinary rainfall … and Geertsema et al. 2018, Anatomy of Simultaneous Flood Peaks…).

I really enjoyed your work.

Thanks for your kind words, and thanks for your time and effort in writing this constructive comment!