

***Interactive comment on “A high-resolution spatial assessment of the impacts of drought variability on vegetation activity in Spain from 1981 to 2015” by S. M. Vicente-Serrano et al.***

**Anonymous Referee #2**

Received and published: 24 December 2018

The authors present a very detailed, innovative analysis (fine-scale spatial resolution) of the relationships between SPEI and NDVI measurements in the Iberian peninsula. A large number of interesting figures, tables and supplementary figures are presented. I think that this data paper is very informative and the methods are robust. I would suggest to the authors to address the following points, if possible and easily achievable:

**Major comments**

- The manuscript is very interesting but lacks a clear focus. A very large number of results, hypotheses and figures are described and commented. Please consider somehow reducing the number of main figures and tables in the main manuscript, providing

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more focus, and shortening the manuscript. Please focus on the more interesting results and move some of the non central figures and the associated text to the supplementary materials.

- Please clarify in all the figures which SPEI temporal scale/s are considered. for example, in Fig 8 it not clear to me which SPEI time scale are considered.

- Please define sNDVI on line 217.

- Please clarify this sentence. Line 163. "The spatial distribution (not shown here) of these pixels concurs well with the areas identified in earlier studies over Spain (e.g. Lasanta and Vicente-Serrano, 2012; Vicente-Serrano et al., 2018)."

Minor comments:

- Figure 10. if easily achievable, using a unique name for the response variable would clarify the figure (increasing at the same time the font size). This may apply to many other figures in the suppl. mat and the main manuscript.

- Figure 10. There is a typographic error in the legend. Please check this detail.

- Please simplify/clarify the following sentence:

On line 290: "This pattern is mostly recorded in the period between May and July (Supplementary Figure 5), in which the sNDVI variability is more sensitive to drought. Nevertheless, there are no general spatial patterns in the response of the NDVI to SPEI, indicating that there is a dominance of the maximum correlations associated with a certain SPEI time scale (Supplementary Figure 6). Interestingly, this , this pattern is not driven by the presence of different land cover types, given that the correlation coefficients between the sNDVI and SPEI are quite similar, irrespective of the land cover type (Supplementary Figures 7 to 17)"

Line- 204. please correct the following typographic error. "... to drought It is well recognized that natural systems can show different responses to the time scales of

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drought (Vicente-Serrano et al., 2011, 2013)."

Line 295. Please correct the following typographic error: "Interestingly, this , this pattern is not driven by the presence of different land cover types,"

Line 61. Check the following sentence. "Several space-based products allow for quantifying vegetation conditions, given that both health and dry vegetation biomass respond dissimilarly to the electromagnetic radiation received in the visible and near-infrared parts of the vegetation spectrum (Knipling, 1970)"

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