

Interactive comment on “Large-scale biospheric drought response intensifies linearly with drought duration” by René Orth et al.

Anonymous Referee #1

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Review for bg-2019-442 Title: Large-scale biospheric drought response intensifies linearly with drought duration

This study investigated the impacts of soil moisture droughts on several variables (NDVI, GPP, ET and crop yield) to infer the vegetation drought response. And the authors found a linear relationship between drought duration and these variables. The contents are well-organized and the evidences supporting the findings are strong. In general, this paper is already well-written. The reviewer only has a few minor concerns and suggestions for the authors to consider. (1) For GPP and ET, how many machine learning products did you use? It will benefit readers' understanding if you can add a table listing the name, spatial resolution, temporal resolution and temporal coverage of all the datasets used in this study. (2) You categorized machine learning GPP and

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ET as observations (Figure 4 and method part), and GLEAM ET as model results. In fact, both machine learning ET and remote sensing based ET are observation-based ET estimates. I suggest you to change the terminology, change “Obs, ET” (Figure. 4a) to “ML, ET”. (3) Line 105, what is the unit of the aridity index used in your study? (4) Line 185, how was the power of drought duration calculated? I suggest you to add it in method. (5) Line 187-189, “Other. . .days.” However, according to Figure S6, the explanatory power of “number of dry days” is larger than that of “drought duration”. Can you explain it?

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