

Response to corrections from reviewer 1:

“I appreciate the authors' effort to improve the manuscript based on my previous suggestions. Overall, I think that the manuscript has been enhanced significantly. I only invite the authors to carefully read the text to perform an in-depth spell check and rephrase some of the new sentences to improve the quality of the language. Some examples of sentences that need to be rewritten are at LL 48-52, LL 86-91 and LL 123-126.”

Multiple paragraphs and sections have corrections according to the indications of Reviewer 1 to improve the clarity of the text, with special attention to rephrasing sentences referring too many results or information. Therefore, line numbers (with all revision visible) in L40-60, L93-111, L138-141, L288-296, L343-356, L370-385 and especially in the discussion section L488-515, L518-524, L533-559, L600-653.

Similarly, we checked spelling of the entire text carefully, and thank the reviewer for the suggestions.

Response to corrections from reviewer 2:

“I greatly appreciated the rigorous and deep work done by the authors to address the comments and remarks from me (but also from the other reviewer). I'm not fully convinced yet by the discussion on the time lags, although I agree that the weekly time scale can be more informative to study the time dependency of the atmosphere-soil interactions. However, I think that the representativeness of drought indexes, mainly when one wants to describe the time chain of atmosphere-soil processes, is an open research question. From this perspective, I think that the quality of the manuscript is excellent and even if I'm not fully convinced, it can support and feed the scientific discussion on a sound basis. At the end of the day, the validity of this kind of indexes, as well as of the adopted methodologies, will be measured on the ground of their efficiency and usefulness in a management framework. Therefore, from my side, congrats to the authors”

We thank the reviewer for the understanding of the value of the article despite the controversial approach. We understand the concerns of the reviewer on the representativeness of drought indices and the suitability of the methodology. In order to clarify that the article approach to the aims of highlighting the analysis of interactions as keystone of drought analysis is just one among the multiple possibilities to address the problem, we have included a specific paragraph in section 6.2. We state that this is one of the multiple approaches possible to the task, and that both drought indices and the methodology may have alternatives. Nonetheless, we conceive the article at least an interesting assessment of the mechanisms of drought with common tools. An investigation aimed to inform about the importance of scales in drought studies, to exhibit the power of recent datasets for drought analysis, and to underline the convenience of exploring the anomalies of specific key variables and their interactions to understand drought processes.